

**EXXON** COMPANY, U.S.A.

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MARKETING DEPARTMENT • ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER  
SENIOR ENGINEER  
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November 3, 1995

Mr. Barney Chan  
Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, #250  
Alameda, California 94502-6577

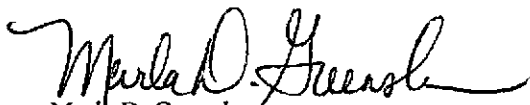
**RE: Exxon RAS #7-3006/720 High Street, Oakland, CA**

Dear Mr. Chan:

Attached for your review and comment is a letter report entitled *Quarterly Groundwater Monitoring and Remediation Status, Third Quarter 1995*, for the above referenced site. This report, prepared by Environmental Resolutions, Inc., (ERI) of Novato, California, details the results of the September 1995 groundwater monitoring and sampling event and remediation activities.

If you have any questions or comments, please contact me at (510) 246-8776.

Sincerely,



Marla D. Guensler  
Senior Engineer

MDG/dn

attachment: ERI Quarterly Report dated October 20, 1995

cc: w/attachments:

Mr. Kevin Graves - San Francisco Bay Region WQCB  
Mr. Scott Owen - BAAQMD  
Mr. Bill Meckel - EBMUD

w/o attachments:

Mr. Marc Briggs - ERI, Novato

ENVIRONMENTAL  
PROTECTION  
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October 20, 1995  
ERI 201013.R03

Ms. Marla Guensler  
Exxon Company, U.S.A.  
2300 Clayton Road  
Suite 640  
Concord, California 94524-2032

Subject: Quarterly Groundwater Monitoring and Remediation Status Report, Third Quarter 1995, Former Exxon Service Station 7-3006, 720 High Street, Oakland, California.

Ms. Guensler:

At the request of Exxon Company, U.S.A. (Exxon), Environmental Resolutions, Inc. (ERI) performed remedial activities and groundwater monitoring for the third quarter 1995 at the subject site (Plate 1). The purpose of ongoing remedial activities at the site is to remove residual hydrocarbons from soil and dissolved hydrocarbons from groundwater. The purpose of quarterly monitoring is to evaluate fluctuations in hydrocarbon concentrations in groundwater, to evaluate the capture zone caused by groundwater pumping, and to evaluate the effectiveness of remedial actions.

#### **GROUNDWATER MONITORING AND SAMPLING**

On September 18, 1995, ERI measured the depth to water (DTW) in monitoring wells MW1 through MW4, and MW6 through MW15 and subjectively analyzed water in these wells for the presence of liquid phase hydrocarbons. Monitoring well MW5 was previously destroyed. No measurable liquid phase hydrocarbons or sheen were observed on groundwater from wells MW1, MW7, MW9 through MW11, and MW14. Monitoring wells MW2 through MW4, MW6, MW8, MW12, MW13, and MW15 had a sheen and therefore were not purged or sampled. ERI's groundwater sampling protocol is attached (Attachment A).

The groundwater appears to flow southwest beneath the site towards the groundwater interceptor trench with an approximate gradient of 0.021 (Plate 2). Monitoring and sampling data for 1994 and 1995 are summarized in Table 1.

#### **Laboratory Analyses and Results**

Groundwater samples were submitted to Sequoia Analytical (California State Certification Number 1210) in Redwood City, California, under chain of custody protocol. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), and total extractable petroleum hydrocarbons as diesel (TEPHd). Samples collected from MW7 and MW14 were also analyzed for Stoddard Solvent and volatile organic compounds. The specific methods of analysis are listed in the notes in Table 1. The

results of analysis are listed in Table 1 and are shown on Plate 2. The laboratory analysis reports and chain of custody records are attached (Attachment B).

## **SOIL AND GROUNDWATER REMEDIATION**

### **Air Sparging/Soil Vapor Extraction**

The air sparging/soil vapor extraction system (AS/VES) consists of eight air sparging wells for air injection, vadose wells for vapor extraction, a water knock-out tank, the ERI 3000 vacuum blower unit, and three vapor-phase carbon absorbers. The system is equipped with a catalytic hydrocarbon detector between carbon absorbers #2 and #3 which automatically shuts the system down when concentrations in the vapor stream exceed the set point (10 parts per million by volume [ppmv]). Additionally, the system is equipped with a high liquid level shutdown to turn the system off if the water level in the knock-out tank reaches the specified level. The AS/VES is operated in a continuous mode.

ERI initiated operation of the AS/VES on January 9, 1995. Vapor samples were collected daily through January 18, 1995. ERI submitted a Source Test Report (dated January 20, 1995) to the Bay Area Air Quality Management District (BAAQMD) requesting the vapor monitoring schedule be revised. The BAAQMD approved a revised monitoring schedule to bi-weekly in their letter dated January 30, 1995.

Cumulative operational and performance data are presented in Table 2. Copies of the Reports of Laboratory Analysis and Chain of Custody Records for AS/VES samples collected during third quarter 1995 are attached (Attachment B). Analyses detected maximum TPHg influent concentrations of 980 micrograms per liter (ug/L). Hydrocarbon concentrations above laboratory detection limits were not emitted to the atmosphere. ERI's standard operating procedures for calculating pounds of hydrocarbons in an air stream is attached (Attachment C).

On July 10, 1995, one 500-pound vapor phase absorber was replaced. On July 19, 1995, two 500-pound vapor phase absorbers were replaced. On August 9, 1995, one 500-pound vapor phase absorber was replaced. On September 18, 1995, two 500-pound vapor phase absorbers were replaced. The system was shut down from August 15 to September 11, 1995 to calibrate the hydrocarbon vapor detector. The system is currently operating within permit conditions.

### **Groundwater Extraction And Treatment**

The groundwater remediation system (GRS) is designed to treat separate-phase and dissolved petroleum hydrocarbons in groundwater extracted from the interceptor trench beneath the site. Pneumatic pumps are installed in extraction wells RW2 and RW5 to recover groundwater from the interceptor trench. Subsurface and above-ground collection piping are used to transfer extracted groundwater to a holding tank. A transfer pump and poly-vinyl chloride (PVC) piping are used to direct the water stream from the holding tank through water filters, an airstripper, and subsequently through liquid-phase granular activated carbon (GAC) canisters connected in series. The treated groundwater is discharged to the sanitary sewer regulated by East Bay Municipal Utilities District (EBMUD).

Between June 27, 1995 and September 18, 1995, the system recovered approximately 23,540 gallons of groundwater from beneath the site.

System flow rates, total volume extracted, and influent, intermediate, and effluent sample concentrations are presented in Table 3. Copies of the Reports of Laboratory Analysis and Chain of Custody Records for water treatment system samples collected during third quarter 1995 are attached (Attachment B). Analyses detected maximum TPHg influent concentrations of 1,900 parts per billion (ppb). Hydrocarbon concentrations above laboratory detection limits were not discharged to the sanitary sewer. No water sample was collected from August 15 to September 11, 1995 because the system was shut down prior to the scheduled sampling date to calibrate the hydrocarbon vapor detector.

On July 10, 1995, two 55-gallon liquid phase absorbers were replaced. The system is currently operating within permit conditions.

### **SUMMARY AND STATUS OF INVESTIGATION**

Based on data collected to date, it appears the system is effectively removing residual hydrocarbons in soil and dissolved hydrocarbons in groundwater; however, because of increased influent vapor concentrations, the carbon consumption rate has increased. ERI estimates approximately 326 pounds of hydrocarbons were removed by the vapor extraction system during the third quarter of 1995 (Attachment C and Table 2), and 566 pounds total since start-up. ERI estimates the groundwater extraction system removed less than 0.25 pounds of hydrocarbons during the third quarter 1995 (Table 3) and less than 1.7 pounds to date. The vapor extraction and groundwater extraction systems were each functioning as of the beginning of the fourth quarter 1995. ERI will continue to operate the remedial systems and monitor groundwater at the site during the fourth quarter 1995.

### **LIMITATIONS**

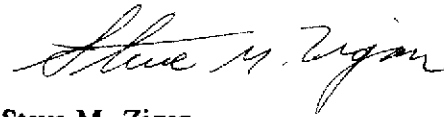
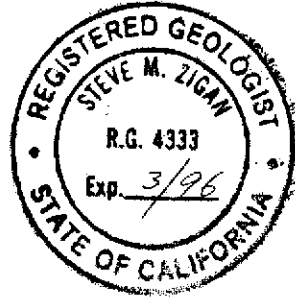
This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This report has been prepared for Exxon Company, U.S.A. and any reliance on this report by third parties shall be at such party's sole risk.

If you have any questions or comments regarding this report, please call (415) 382-5991.

Sincerely,  
Environmental Resolutions, Inc.



Marc A. Briggs  
Project Manager



Steve M. Zigan  
R.G. 4333  
H.G. 133

- Enclosures:
- Table 1: Groundwater Monitoring and Sampling Data
  - Table 2: Operation and Performance Data for Air Sparging/Soil Vapor Extraction System
  - Table 3: Operation and Performance Data for Groundwater Remediation System
  
  - Plate 1: Site Vicinity Map
  - Plate 2: Generalized Site Plan
  
  - Attachment A: Groundwater Sampling Protocol
  - Attachment B: Laboratory Analysis Reports and Chain of Custody Records
  - Attachment C: ERI SOP-25 "Hydrocarbons Removed from a Vadose Well"

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
(Page 1 of 12)

Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet	Elev. > . . . . . <	TPHg < . . . . . >	B	T	E	X	MTBE	TEPHd	VOCs > . . . . . <
									parts per billion			
MW1 (12.87)	01/20/94	NLPH	9.25	3.62#								
	02/02-03/94	NLPH	8.60	4.27	<50	<0.5	<0.5	<0.5	0.7	NA	70	NA
	03/10/94	NLPH	8.31	4.56#								
	04/22/94	NLPH	7.95	4.92#								
	05/10-11/94	NLPH	7.48	5.39	<50	<0.5	<0.5	<0.5	1.6	NA	100	NA
	06/27/94	NLPH	7.65	5.22#								
	08/31/94	NLPH	9.39	3.48#								
	09/29/94	NLPH	9.83	3.04	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	10/25/94	NLPH	10.19	2.68	<50	<0.5	<0.5	<0.5	<0.5	<50	NA	NA
	11/30/94	NLPH	8.97	3.90#								
	12/27/94	NLPH	7.44	5.43#								
	02/06/95	NLPH	5.71	7.16	<50	0.52	<0.5	<0.5	<0.5	100	NA	NA
	06/07/95	NLPH	7.62	5.25	<50	<0.5	<0.5	<0.5	<0.5	3.5	81	NA
	09/18/95	NLPH	10.02	2.85	<50	<0.5	<0.5	<0.5	<0.5	6.0	82	NA
MW2 (12.98)	01/20/94	NM [NR]	NM	—								
	02/02-03/94	NM [NR]	NM	—								
	03/10/94	[8 c.]	6.96	6.29#								
	04/22/94	[10 c.]	NM	—								
	05/10-11/94	[5 c.]	NM	—								
	06/27/94	Sheen	7.10	5.88#								
	08/31/94	Sheen	8.58	4.40#								
	09/29/94	Sheen	9.11	3.87#								
	10/25/94	Sheen	7.76	5.22#								
	11/30/94	NM	7.33	5.65#								

See Notes on page 12 of 12

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet . . . . .	Elev. > . . . . . <	TPHg < . . . . . >	B	T	E	X	MTBE	TEPHd	VOCs > . . . . . <
					parts per billion							
MW2 cont. (12.98)	12/27/94	Sheen	6.77	6.21#								
	02/06/95	Sheen	5.00	7.98#								
	06/07/95	Sheen	7.14	5.84#								
	09/18/95	Sheen	10.82	2.16#								
MW3 (12.92)	01/20/94	Sheen	8.24	4.70#								
	02/02-03/94	Sheen	7.68	5.26#								
	03/10/94	Sheen	7.24	5.68#								
	04/22/94	Sheen	6.79	6.13#								
	05/10-11/94	Sheen	6.43	6.49#								
	06/27/94	0.01 [NR]	6.97	5.95#								
	08/31/94	Sheen	8.41	4.51#								
	09/29/94	Sheen	8.97	3.95#								
	10/25/94	Sheen	9.43	3.49#								
	11/28/94	NM	7.19	5.73#								
	12/27/94	Sheen	6.64	6.28#								
	02/06/95	Sheen	4.87	8.05#								
	06/07/95	Sheen	7.05	5.87#								
	09/18/95	Sheen	10.61	2.31#								
MW4 (12.77)	01/20/94	NM [NR]	NM	---								
	02/02-03/94	NM [1 c.]	NM	---								
	03/10/94	[8 c.]	7.12	5.65#								
	04/22/94	[10 c.]	NM	---								
	05/10-11/94	[5 c.]	NM	---								

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**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet . . . . .	Elev. > . . . . .	TPHg < . . . . .	B	T	E	X	MTBE	TEPHd	VOCs >
					parts per billion . . . . .							
MW4 cont. (12.77)	06/27/94	0.01 [NR]	6.50	6.27#								
	08/31/94	0.02 [NR]	7.84	4.93#								
	09/29/94	0.03 [NR]	8.43	4.37#								
	10/25/94	Sheen	9.24	3.53#								
	11/30/94	NM	6.77	6.00#								
	12/27/94	Sheen	6.14	6.63#								
	02/06/95	Sheen	4.87	7.90#								
	06/07/95	Sheen	6.91	5.86#								
	09/18/95	Sheen	9.59	3.18"								
MW5 (8.38)	07/18/89	Well Destroyed										
MW6 (14.27)	01/20/94	NM [NR]	NM	---								
	02/02-03/94	NM [NR]	NM	---								
	03/10/94	[¼ c.]	7.82	6.45#								
	04/22/94	[10 c.]	NM	---								
	05/10-11/94	[3 c.]	NM	---								
	06/27/94	Sheen	7.77	6.50#								
	08/31/94	Sheen	9.02	5.25#								
	09/29/94	Sheen	9.51	4.76#								
	10/25/94	Sheen	9.93	4.34#								
	11/30/94	NM	8.05	6.22#								
	12/27/94	NM	7.54	6.73#								
	02/06/95	Sheen	5.86	8.41#								
	06/07/95	Sheen	8.07	6.20#								
	09/18/95	Sheen	10.54	3.73#								

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TABLE 1  
 GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-3006  
 720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet	Elev. > . . . . . <	TPHg								VOCs
					B	T	E	X	MTBE	TEPHd	parts per billion		
MW7 (14.84)	01/20/94	NLPH	8.67	6.17#									
	02/02-03/94	NLPH	8.47	6.37	2,900	79	5.0	8.2	21	NA	1,300	NA	
		Additional Analysis TOG:				470 <sup>1</sup>							
	03/10/94	NLPH	8.24	6.60#									
	04/22/94	NLPH	7.95	6.89#									
	05/10-11/94	NLPH	7.53	7.31#	2,400	88	5.6	5.2	15	NA	1,300	NA	
		Additional Analysis TOG:				1,400							
	06/27/94	NLPH	8.01	6.83#									
	08/31/94	NLPH	9.19	5.65#									
	09/29/94	NLPH	9.65	5.19	1,900	71	3.1	3.5	7.8	NA	56	NA	
	10/25/94	NLPH	9.96	4.88	1,400	51	1.5	24	6.8	NA	89	NA	
	11/30/94	NM	7.78	7.06#						NA			
	12/27/94	NM	7.51	7.33#									
	02/06/95	NLPH	5.79	9.05	2,500	130	<10	<10	<10	NA	1,300	ND	
		Additional Analysis Stoddard Solvent:				1,100							
	06/07/95	NLPH	7.73	7.11	2,400	91	5.0	7.6	14	39	1,200	NA	
		Additional Analysis Stoddard Solvent:				1,000							
	09/18/95	NLPH	9.81	5.03	1,800	17	<5.0	<5.0	<5.0	<25	1,100	NA	

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**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . .	DTW feet . . . . .	Elev. > . . . . .	TPHg < . . . . .	B	T	E	X	MTBE	TEPHd > . . . . .	VOCs >
					parts per billion . . . . .							
<b>MW8</b>												
(13.45)	01/20/94	Sheen	8.90	4.55#								
	02/02-03/94	Sheen	8.58	4.87#								
	03/10/94	NLPH	7.16	6.29#								
	04/22/94	Sheen	7.34	6.11#								
	05/10-11/94	Sheen	7.04	6.41#								
	06/27/94	Sheen	6.01	7.44#								
	08/31/94	Sheen	9.26	4.19#								
	09/29/94	Sheen	9.76	3.72#								
	10/25/94	Sheen	10.05	3.40#								
	11/30/94	NM	7.68	5.77#								
	12/27/94	Sheen	7.11	6.34#								
	02/06/95	Sheen	5.39	8.06#								
	06/07/95	Sheen	7.53	5.92#								
	09/18/95	Sheen	9.84	3.61#								
<b>MW9</b>												
(14.64)	01/20/94	NM	NM	--								
	02/02-03/94	NM	NM	--								
	03/10/94	NLPH	6.90	7.74#								
	04/22/94	NLPH	7.38	7.26#								
	05/10-11/94	NLPH	6.96	7.68#								
	06/27/94	NLPH	7.65	6.99#								
	08/31/94	NLPH	8.87	5.77#								
	09/29/94	NLPH	9.19	5.45	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	10/25/94	NLPH	9.66	4.98	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	11/30/94	NM	8.38	6.26#								
	12/27/94	NLPH	7.29	7.35#								

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**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet	Elev. > . . . . . <	TPHg < . . . . . >	B	T	E	X	MTBE	TEPHd	VOCs > . . . . . <
					parts per billion							
MW9 cont. (14.64)	02/06/95	NLPH	5.74	8.90	<50	<0.5	<0.5	<0.5	<0.5	NA	56	NA
	06/07/95	NLPH	8.33	6.31	<50	<0.5	<0.5	<0.5	<0.5	<2.5	72	NA
	09/18/95	NLPH	9.28	5.36	<50	<0.5	<0.5	<0.5	<0.5	<2.5	60	NA
MW10 (14.05)	01/20/94	NLPH	8.40	5.65#								
	02/02-03/94	NLPH	8.00	6.05	<50	<0.5	1.0	<0.5	1.8	NA	<50	NA
	03/10/94	NLPH	7.56	6.49#								
	04/22/94	NLPH	7.35	6.70#								
	05/10-11/94	NLPH	7.06	6.99	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	06/27/94	NLPH	7.59	6.46#								
	08/31/94	NLPH	8.73	5.32#								
	09/29/94	NLPH	9.07	4.98	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	10/25/94	NLPH	9.41	4.64	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA
	11/30/94	NM	7.62	6.43#								
	12/27/94	NLPH	7.01	7.04#								
	02/06/95	NLPH	5.60	8.45	<50	<0.5	<0.5	<0.5	<0.5	<50	NA	NA
	06/07/95	NLPH	7.12	6.93	<50	<0.5	<0.5	<0.5	<0.5	<2.5	<50	NA
09/18/95	NLPH	8.54	5.51	<50	<0.5	<0.5	<0.5	<0.5	<2.5	<50	NA	
MW11 (13.55)	01/20/94	NLPH	9.61	3.94#								
	02/02-03/94	NLPH	9.56	3.99	<50	<0.5	1.0	<0.5	0.9	NA	160	NA
	03/10/94	NLPH	8.59	4.96#								
	04/22/94	NLPH	8.47	5.08#								
	05/10-11/94	NLPH	8.12	5.43	<50	<0.5 <sup>3</sup>	<0.5	<0.5	3.2	NA	100 <sup>2</sup>	NA
	06/27/94	NLPH	8.65	4.90#								

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**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet	Elev. > . . . . . <	parts per billion								
					TPHg < . . . . . >	B	T	E	X	MTBE	TEPHd	VOCs	
MW11 cont. (13.55)	08/31/94	NLPH	9.80	3.75#									
	09/29/94	NLPH	10.16	3.39	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA	
	10/25/94	NLPH	10.48	3.07	<50	<0.5	<0.5	<0.5	<0.5	NA	<50	NA	
	11/30/94	NM	8.55	5.00#									
	12/27/94	NLPH	7.98	5.57#									
	02/06/95	NLPH	6.49	7.06	<50	<0.5	<0.5	<0.5	<0.5	NA	160	NA	
	06/07/95	NLPH	7.98	5.57	<50	<0.5	<0.5	<0.5	<0.5	42	50	NA	
	09/18/95	NLPH	10.12	3.43	<50	<0.5	<0.5	<0.5	<0.5	32	56	NA	
MW12 (12.61)	01/20/94	NLPH	7.81	4.80#									
	02/02-03/94	NLPH	7.22	5.39	48,000	4,000	2,700	2,900	9,900	NA	18,000	NA	
	03/10/94	NLPH	6.16	6.45#									
	04/22/94	NLPH	6.31	6.30#									
	05/10-11/94	NLPH	6.16	6.45	46,000	3,000 <sup>3</sup>	1,600	2,900	9,100	NA	8,200	NA	
	06/27/94	NLPH	6.55	6.06#									
	08/31/94	NLPH	7.97	4.64#									
	09/29/94	Sheen	8.52	4.09#									
	10/25/94	Sheen	8.74	3.87#									
	11/30/94	NM	8.73	3.88#									
	12/30/94	NLPH	6.17	6.44#									
	02/06/95	Sheen	4.44	8.17#									
	06/07/95	Sheen	6.59	6.02#									
	09/18/95	Sheen	8.96	3.65#									
	MW13 (14.20)	01/20/94	NLPH	9.08	5.12#								
02/02-03/94		NLPH	8.75	5.45	41,000	3,800	1,500	2,700	9,500	NA	8,100	NA	

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**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBI < . . . . .	DTW feet . . . . .	Elev. >	TPHg < . . . . .	B	T	E	X	MTBE	TEPHd	VOCs >
					parts per billion . . . . .							
MW13 cont. (14.20)	03/10/94	Sheen	7.46	6.74#								
	04/22/94	Sheen	7.78	6.42#								
	05/10-11/94	NLPH	7.61	6.59	39,000	3,400	930	2,400	8,900	NA	15,000	NA
	06/27/94	NLPH	7.97	6.23								
	08/31/94	NLPH	9.21	4.99								
	09/29/94	NLPH	9.61	4.59	57,000	2,100	470	2,600	8,100	NA	320	NA
	10/25/94	Sheen	9.93	4.27								
	11/30/94	NM	8.16	6.04#								
	12/27/94	NM	7.61	6.59#								
	02/06/95	Sheen	5.89	8.31#								
	06/07/95	Sheen	8.05	6.15#								
	09/18/95	Sheen	9.94	4.26#								
MW14 (15.18)	01/20/94	NM	NM	---								
	02/02-03/94				Not Accessible							
	03/10/94	NLPH	7.84	7.34#								
	04/22/94	NLPH	8.00	7.18#								
	05/10-11/94	NLPH	7.93	7.25	300	2.7	7.9	2.0	27	NA	1,100 <sup>2</sup>	NA
		Additional Analysis:			210							
	06/27/94	NLPH	8.19	6.99#								
	08/31/94	NLPH	9.44	5.74#								
	09/29/94	NLPH	9.82	5.36	300	<0.5	<0.5	0.9	1.3	1,600	NA	NA
	10/25/94	NLPH	9.99	5.19	200	<0.5	<0.5	0.8	<0.5	210	NA	NA
	11/30/94	NM	8.16	6.61#								
	12/27/94	Sheen	8.15	7.03#								
02/06/95	NLPH	7.18	8.00	360	<1.0	<1.0	<1.0	<1.0	NA	1,200	NA	
	Additional Analysis TOG:			400								

See Notes on page 12 of 12

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
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Well ID # (TOC)	Sampling Date	SUBJ < . . . . . >	DTW feet	Elev. > . . . . . <	TPHg < . . . . . >	B	T	E	X	MTBE	TEPHd	VOCs
. . . . . parts per billion . . . . .												
MW14 cont. (15.18)	06/07/95	NLPH	7.70	7.48	670	<0.5	<0.5	3.6	<0.5	<2.5	1,100	NA
	09/18/95	NLPH	9.88	5.30	1,300	<2.0	<2.0	<2.0	3.0	<10	1,900	NA
		Additional Analysis Stoddard Solvent: 450										
		Additional Analysis Stoddard Solvents: 1,200										
MW15 (13.73)	01/20/94	NLPH	7.48	6.25#								
	02/02-03/94	NLPH	7.30	6.43	4,300	24	6.7	170	26	NA	1,200	NA
	03/10/94	NLPH	7.32	6.41#								
	04/22/94	NLPH	6.67	7.06#								
	05/10-11/94	NLPH	5.81	7.92	3,900	16	<0.5	150	13	NA	1,400	NA
	06/27/94	NLPH	6.14	7.59#								
	08/31/94	NLPH	7.20	6.53#								
	09/29/94	NLPH	7.76	5.97	2,500	51	15	48	3.6	NA	420	NA
	10/25/94	Sheen	8.19	5.54#								
	11/30/94	NM	8.57	5.16#								
	12/27/94	NLPH	6.49	7.24#								
	02/06/95	Sheen	4.97	8.76#								
	06/07/95	Sheen	7.14	6.59#								
	09/18/95	Sheen	9.00	4.73#								
VW1 (14.01)	01/20/94	Dry										
	02/02-03/94	NLPH	5.58	8.43#								
	03/10/94	NLPH	6.19	7.82#								
	04/22/94	NLPH	5.96	8.05#								
	05/10-11/94	NLPH	5.66	8.35#								
	06/27/94	NLPH	5.99	8.02#								

See Notes on page 12 of 12

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-3006  
720 High Street, Oakland, California  
(Page 10 of 12)

Well ID # (TOC)	Sampling Date	SUBJ < . . . . .	DTW feet . . . . .	Elev. >	TPHg <	B	T	E	X	MTBE	TEPHd	VOCs >
					parts per billion . . . . .							
VW cont. (14.01)	08/31/94	NLPH	3.92	10.09#								
	09/29/94	NM	NM	---								
	10/25/94	Sheen	5.80	8.21#								
	11/30/94	NM	6.21	7.80#								
	12/27/94	NM	NM	---								
	02/06/95	NM	NM	---								
	06/07/95	NM	NM	---								
	09/18/95	NM	NM	---								
VW2 (14.09)	01/20/94	NLPH	7.75	6.34#								
	02/02-03/94	Dry										
	03/10/94	NLPH	6.85	7.24#								
	04/22/94	NLPH	7.30	6.79#								
	05/10-11/94	NLPH	7.20	6.89#								
	06/27/94	NLPH	7.29	6.80#								
	08/31/94	NLPH	7.75	6.34#								
	09/29/94	NM	NM	---								
	10/25/94	NLPH	7.76	6.33#								
	11/30/94	NM	7.77	6.32#								
	12/27/94	NM	NM	---								
	02/06/95	NM	NM	---								
	06/07/95	NM	NM	---								
09/18/95	NM	NM	---									
VW3 (13.37)	01/20/94	NLPH	7.49	5.88#								
	02/02-03/94	NLPH	7.15	6.22#								

See Notes on page 12 of 12

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
 Former Exxon Service Station 7-3006  
 720 High Street, Oakland, California  
 (Page 11 of 12)

Well ID # (TOC)	Sampling Date	SUBJ < . . . . .	DTW feet . . . . .	Elev. >	TPHg < . . . . .	B	T	E	X	MTBE	TEPHd	VOCs >
VW3 cont.	03/10/94	NLPH	6.21	7.16#								
(13.37)	04/22/94	NLPH	6.34	7.03#								
	05/10-11/94	NLPH	5.92	7.45#								
	06/27/94	NLPH	6.66	6.71#								
	08/31/94	NLPH	7.55	5.82#								
	09/29/94	NM	NM	—								
	10/25/94	NLPH	7.57	5.80#								
	11/30/94	NM	6.97	6.40#								
	12/27/94	NM	NM	---								
	02/06/95	NM	NM	---								
	06/07/95	NM	NM	---								
	09/18/95	NM	NM	---								

See Notes on page 12 of 12



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**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Exxon Service Station 7-3006  
720 High Street, Oakland, California

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Notes:

SUBJ	= Results of subjective evaluation, liquid-phase hydrocarbon thickness (HT) in feet
LPH	= Liquid-phase hydrocarbons present, thickness not measured
NLPH	= No liquid phase hydrocarbons present in well
TOC	= Elevation of top of well casing; relative to mean sea level
DTW	= Depth to water
Elev.	= Elevation of groundwater. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.8)].
[ ]	= amount recovered
gal.	= gallons
c.	= cups
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using modified EPA method 5030/8015.
BTEX	= Benzene, Toluene, Ethylbenzene, and total Xylenes analyzed using EPA method 5030/8020.
TEPHd	= Total extractable petroleum hydrocarbons as diesel analyzed using EPA method 3510/8015.
MTBE	= Methyl tert-butyl ether analyzed using modified EPA method 5030/8020.
VOCs	= Volatile organic compounds analyzed using EPA method 601.
TOG	= Total oil and grease analyzed using Standard Method 5520.
NR	= No liquid-phase hydrocarbons removed from well
NM	= Not Measured
ND	= Not Detected at or above the laboratory method detection limits
NA	= Not Analyzed
—	= Not Applicable
<	= Less than the indicated detection limit shown by the laboratory
#	= Well monitored but not sampled
1	= A peak eluting earlier than benzene and suspected to be methyl tert-butyl ether was present

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**TABLE 2**  
**OPERATION AND PERFORMANCE DATA FOR**  
**AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM**

Former Exxon Service Station 7-3006

720 High Street  
Oakland, California

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revised 10/18/95

Date	Flowrate [acfm]	Sample ID	HC Conc [ug/l] or [mg/cuM]	Benzene Conc [ug/l] or [mg/cuM]	HC Extracted per period *[lb]	HC Extracted Cumulative *[lb]	Benzene Extracted per period *[lb]	Benzene Extracted Cumulative *[lb]	Benzene Emitted per day *[lb]
1/9/95	158	A-INF	210	39	--	--	--	--	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					
1/10/95	158	A-INF	110	22	2.27	2.27	0.433	0.433	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/11/95	158	A-INF	70	12	1.28	3.55	0.241	0.674	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/12/95	158	A-INF	<10	<0.1	0.57	4.11	0.086	0.759	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/13/95	160	A-INF	<10	<0.1	0.14	4.26	0.001	0.761	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/14/95	160	A-INF	<10	<0.1	0.14	4.40	0.001	0.762	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/15/95	158	A-INF	<10	<0.1	0.14	4.54	0.001	0.764	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/16/95	158	A-INF	<10	<0.1	0.14	4.68	0.001	0.765	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/17/95	155	A-INF	<10	0.13	0.14	4.82	0.002	0.767	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/18/95	155	A-INF	100	12	0.77	5.59	0.084	0.851	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
1/20/95	155								
2/1/95	147	A-INF	39	3.5	13.19	18.78	1.471	2.322	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
2/13/95	147								

See notes page 3 of 3

**TABLE 2**  
**OPERATION AND PERFORMANCE DATA FOR**  
**AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM**  
Former Exxon Service Station 7-3006  
720 High Street  
Oakland, California  
Page 2 of 3

Date	Flowrate [acfm]	Sample ID	HC Conc [ug/l] or [mg/cuM]	Benzene Conc [ug/l] or [mg/cuM]	HC Extracted per period *[lb]	HC Extracted Cumulative *[lb]	Benzene Extracted per period *[lb]	Benzene Extracted Cumulative *[lb]	Benzene Emitted per day *[lb]
2/27/95	151								
3/13/95	176	A-INF	<10	0.42	14.21	32.98	1.137	3.458	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
3/31/95	116								
4/4/95	84								
4/12/95	176	A-INF	95	6.4	24.88	57.87	1.616	5.074	
		A-INT	<10	0.38					
		A-EFF	<10	<0.1					< 0.002
4/19/95	109	A-INF	210	7.6	13.65	71.52	0.627	5.701	
		A-INT	47	12					
		A-EFF	<10	<0.1					< 0.001
4/20/95		Replaced 2 ea x 500 lb canisters = 1000 lbs of Carbon							
4/26/95	84	A-INF	400	9.1	18.49	90.01	0.506	6.208	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
5/1/95		Installed third 500 lb canister in series							
5/1/95	168	A-INF	Insufficient sample for analyses						
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
5/15/95	84								
5/19/95	105	A-INF	140	3.5	52.68	142.69	1.229	7.437	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
6/6/95	178	A-INF	36	0.22	20.12	162.81	0.425	7.862	
		A-INT	<10	0.1					
		A-EFF	<10	<0.1					< 0.001
6/27/95		Replaced one 500 lb carbon canister							
6/27/95	164	A-INF	440	4.9	76.72	239.53	0.825	8.687	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.002
7/3/95		A-EFF	<10	<0.1					
7/10/95		Replaced one 500 lb carbon canister							
7/10/95	168	A-INF	230	2.8	64.89	304.42	0.746	9.433	
		A-INT	120	2.8					
		A-EFF	<10	<0.1					< 0.001

See notes page 3 of 3

**TABLE 2**  
**OPERATION AND PERFORMANCE DATA FOR**  
**AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM**

Former Exxon Service Station 7-3006

720 High Street  
Oakland, California

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Date	Flowrate [acfm]	Sample ID	HC Conc [ug/l] or [mg/cuM]	Benzene Conc [ug/l] or [mg/cuM]	HC Extracted per period *[lb]	HC Extracted Cumulative *[lb]	Benzene Extracted per period *[lb]	Benzene Extracted Cumulative *[lb]	Benzene Emitted per day *[lb]
7/19/95		Replaced 2 ea x 500 lb canisters = 1000 lbs of Carbon							
7/25/95		Collect samples and shut system down pending results							
7/25/95	205	A-INF	67	<0.5	37.29	341.71	0.414	9.847	
		A-INT	<100	<1.0					
		A-EFF	<10	<0.1					< 0.002
7/28/95		System down - could not restart							
7/31/95		Restart system							
7/31/95	164	A-INF	500	14	28.17	369.88	0.720	10.568	
		A-INT	12	<0.1					
		A-EFF	<10	<0.1					< 0.002
8/9/95		Replaced one 500 lb carbon canister							
8/15/95		System down - Remove hydrocarbon vapor detector and send to manufacture for calibration							
9/11/95		Replaced hydrocarbon vapor detector - Restarted system							
9/13/95		System Down - hydrocarbon vapor detector shut down							
9/18/95		Replaced 2 ea x 500 lb canisters = 1000 lbs of carbon							
9/18/95	164	A-INF	980	13	196.08	565.96	1.789	12.356	
		A-INT	<10	<0.1					
		A-EFF	<10	<0.1					< 0.001
9/20/95		System Down - hydrocarbon vapor detector shut down							
9/25/95		Restarted system							
9/25/95	164	A-INF	NA	2.4			0.149	12.506	
		A-INT	NA	<0.1					
		A-EFF	NA	<0.1					< 0.001

**Notes:**

A-INF = Air Influent  
A-INT = Air Intermediate  
A-EFF = Air Effluent  
NA = Not Analyzed

HC = Hydrocarbon  
ug/l = micrograms per liter  
mg/cuM = milligrams per cubic meter  
lb = pounds  
acfm = actual cubic feet per minute

\*If value is below laboratory detection limit, detection limit value is used.

\*Values calculated using ERI SOP-25 "Hydrocarbons Removed from a Vadose Well" (Attachment C)

**TABLE 3**  
**OPERATION AND PERFORMANCE DATA FOR**  
**GROUNDWATER REMEDIATION SYSTEM**  
Former Exxon Service Station, 7-3006  
720 High Street  
Oakland, California  
Page 1 of 4

Revised 10/26/95

Date	Total Flow [gal]	Average Flowrate [gpd]	Sample ID	Analytical Data						TPHg Removed		Benzene Removed	
				TPHg [ug/l]	B [ug/l]	T [ug/l]	E [ug/l]	X [ug/l]	Arsenic [mg/l]	Per Period [lb]	Cumulative [lb]	Per Period [lb]	Cumulative [lb]
1/9/95	0		W-INF	3400	630	190	100	460	NA				
	--	--	W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
	--	--	W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.0076				
1/10/95	--	--	--	--	--	--	--	--	--				
1/11/95	795	398	--	--	--	--	--	--	--				
1/13/95	1065	135	System shut down pending EBMUD arsenic revision (discharge limit of 0.0012 ppm)										
1/23/95	1065	0	--	--	--	--	--	--	--				
2/13/95	1065	0	--	--	--	--	--	--	--				
2/14/95	1065	0	--	--	--	--	--	--	--				
2/17/95	1065	0	--	--	--	--	--	--	--				
2/27/95	1065	0	--	--	--	--	--	--	--				
3/7/95	1065	0	EBMUD arsenic revision (discharge limit of 0.05 ppm)										
3/13/95	10800	1623	W-INF	110	7.4	0.5	0.53	6	NA	0.1581	0.1581	0.0287	0.0287
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	<0.005				
3/21/95	11660	108	W-INF	<50	4.5	<0.5	<0.5	5.5	NA	0.0006	0.1587	0.0000	0.0288
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.0059				
			System shut down - 55-gallon liquid phase carbon canister (leak)										
3/30/95	11760	11	Replaced one 55-gallon liquid phase carbon canister (leak)										

See Notes page 4 of 4.

**TABLE 3**  
**OPERATION AND PERFORMANCE DATA FOR**  
**GROUNDWATER REMEDIATION SYSTEM**  
Former Exxon Service Station, 7-3006  
720 High Street  
Oakland, California  
Page 2 of 4

Date	Total Flow [gal]	Average Flowrate [gpd]	Sample ID	Analytical Data						TPHg Removed		Benzene Removed	
				TPHg [ug/l]	B [ug/l]	T [ug/l]	E [ug/l]	X [ug/l]	Arsenic [mg/l]	Per Period [lb]	Cumulative [lb]	Per Period [lb]	Cumulative [lb]
4/4/95	11760		Replaced one 55-gallon liquid phase carbon canister (leak) - Started system										
4/4/95	12660	180	W-INF	220	66	11	4.8	16	NA	0.0011	0.1598	0.0003	0.0291
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.0096				
4/12/95	53200	5068	W-INF	770	110	19	<5.0	160	NA	0.1674	0.3273	0.0298	0.0588
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	<0.005				
4/19/95	73710	2930	W-INF	400	47	5.4	<0.5	40	NA	0.1001	0.4274	0.0134	0.0723
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.0055				
4/26/95	82820	1301	W-INF	1500	190	44	12	150	NA	0.0722	0.4996	0.0090	0.0813
			W-INT	200	31	3.2	<0.5	15	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.008				
5/9/95	83750	72	Replaced two 55-gallon liquid phase carbon canisters (leaks)										
5/26/95	97840	829	W-INF	680	210	16	5.8	28	NA	0.1366	0.6362	0.0251	0.1063
			W-INT	<50	0.94	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				

See Notes page 4 of 4.

**TABLE 3**  
**OPERATION AND PERFORMANCE DATA FOR**  
**GROUNDWATER REMEDIATION SYSTEM**

Former Exxon Service Station, 7-3006

720 High Street

Oakland, California

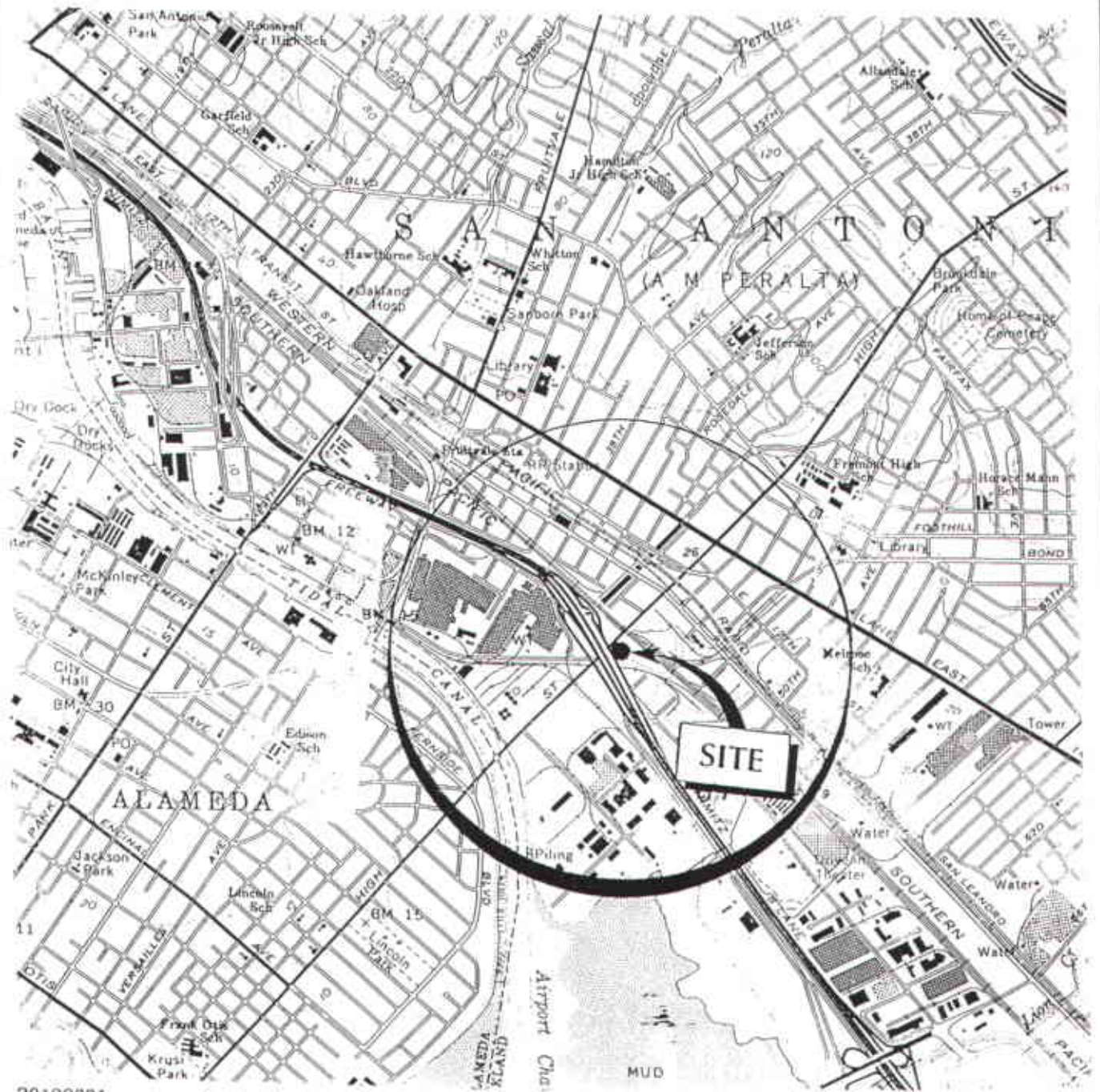
Page 3 of 4

Date	Total Flow [gal]	Average Flowrate [gpd]	Sample ID	Analytical Data						TPHg Removed		Benzene Removed	
				TPHg [ug/l]	B [ug/l]	T [ug/l]	E [ug/l]	X [ug/l]	Arsenic [mg/l]	Per Period [lb]	Cumulative [lb]	Per Period [lb]	Cumulative [lb]
6/6/95			Added two 55-gallon liquid phase carbon canisters in series										
6/6/95			Replaced one 55-gallon liquid phase carbon canister (leak)										
6/8/95			W-INF	2800	660	300	54	340	NA				
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-INT2	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF2	<50	<0.5	<0.5	<0.5	<0.5	NA				
6/27/95	125010	849	W-INF1	4500	1700	99	35	220	NA	0.5871	1.2233	0.2165	0.3228
			W-INF2	810	420	20	7.9	58	NA				
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-INT2	<50	0.53	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF2	<50	<0.5	<0.5	<0.5	<0.5	NA				
7/10/95	131370	489	Replaced two 55-gallon liquid phase carbon canisters										
7/11/95	131690	320	W-INF1	1600	530	15	<10	59	NA	0.1700	1.3933	0.0621	0.3850
			W-INF2	630	270	7.0	<5.0	25	NA				
			W-INT1	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-INT2	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	0.041				
Additional Analyses: ND Purgeable Volatile Organics, ND Priority Pollutant Metals, except for 12 ppb nickel and 8.0 ppb zinc													
See Notes page 4 of 4.													

**TABLE 3**  
**OPERATION AND PERFORMANCE DATA FOR**  
**GROUNDWATER REMEDIATION SYSTEM**  
 Former Exxon Service Station, 7-3006  
 720 High Street  
 Oakland, California  
 Page 4 of 4

Date	Total Flow [gal]	Average Flowrate [gpd]	Sample ID	Analytical Data						TPHg Removed		Benzene Removed	
				TPHg [ug/l]	B [ug/l]	T [ug/l]	E [ug/l]	X [ug/l]	Arsenic [mg/l]	Per Period [lb]	Cumulative [lb]	Per Period [lb]	Cumulative [lb]
7/25/95	141550	704	System down pending results of air samples										
7/28/95			System Down - Could not Restart										
7/31/95			Restart System										
8/15/95			System Down - Remove hydrocarbon vapor detector and send to manufacturer for calibration										
9/11/95			Replaced hydrocarbon vapor detector - Restarted System										
9/13/95			System Down - hydrocarbon vapor detector shut down										
9/18/95			Restart System										
9/18/95	148550	244	W-INF1	1900	590	33	16	120	NA	0.2462	1.6395	0.0788	0.4637
			W-INT2	490	150	7.6	3.1	30	NA				
			W-INT	<50	<0.5	<0.5	<0.5	<0.5	NA				
			W-EFF	<50	<0.5	<0.5	<0.5	<0.5	NA				
9/20/95			System Down - hydrocarbon vapor detector shut down										
9/25/95			Restart System										
W-INF	W-INF1		= water influent before stripper					B	= Benzene		NA	= Not applicable	
	W-INF2		= water influent after stripper					T	= Toluene		NS	= Not sampled	
W-INT	W-INT1	W-INT2	= water intermediate					E	= Ethylbenzene		ND	= Not detected	
W-EFF	W-EFF1	W-EFF2	= water effluent					X	= Total Xylenes				
TPHg	= Total petroleum hydrocarbons as gasoline												





20100001



APPROXIMATE SCALE



Source: U.S.G.S. 7-5 minute topographic quadrangle map Oakland/San Leandro, California Photorevised 1980

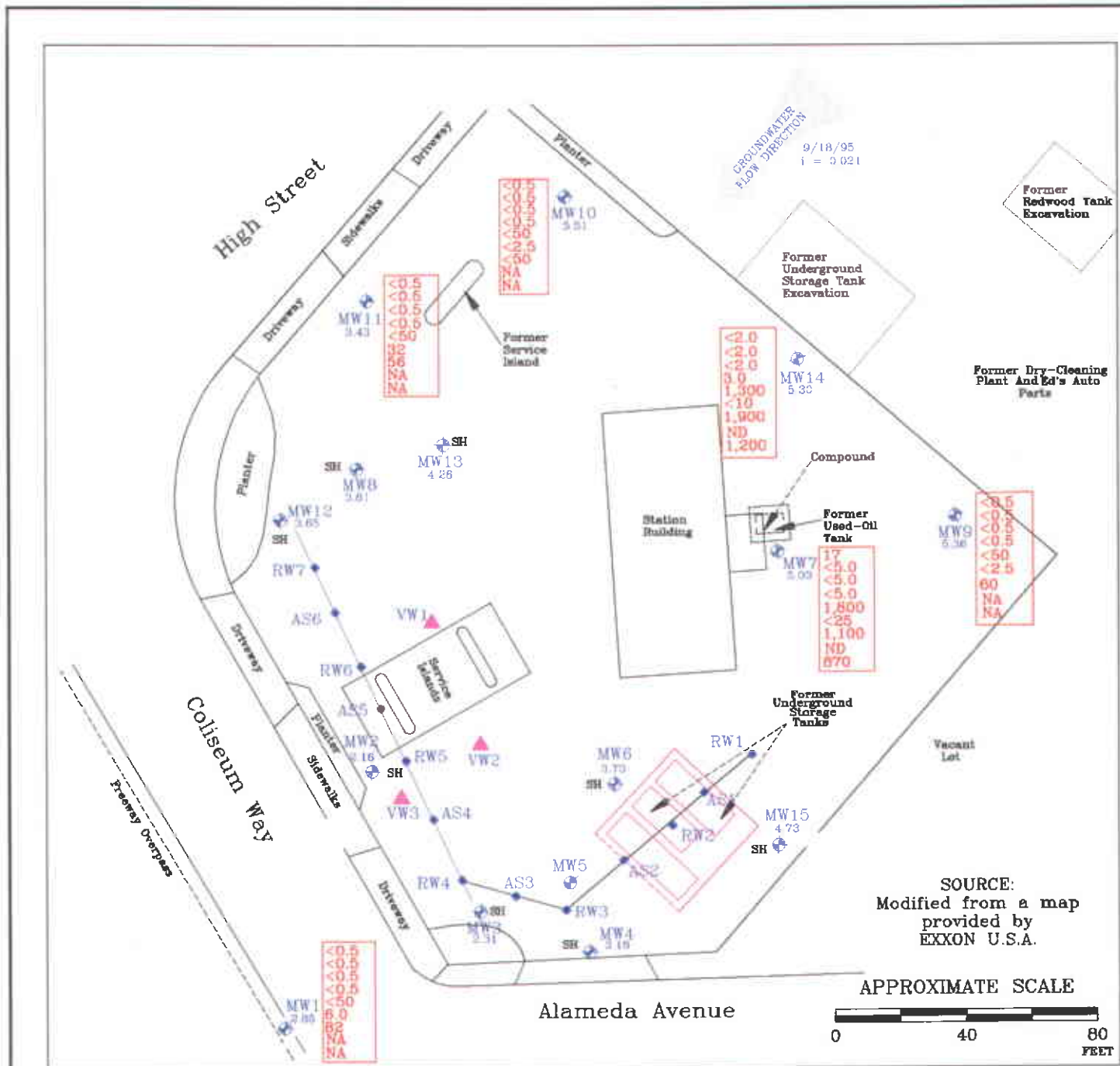


PROJECT ERI 2010

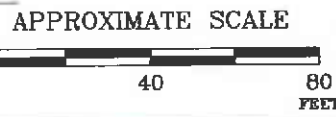
**SITE VICINITY MAP**  
 FORMER EXXON SERVICE STATION 7-3006  
 720 High Street  
 Oakland, California

**PLATE**

1



SOURCE:  
Modified from a map  
provided by  
EXXON U.S.A.



FN 20100002

**EXPLANATION**

- MW15 Groundwater Monitoring Well  
5.51 = Elevation of groundwater in feet above mean sea level. (9/18/95)
- MW5 Groundwater Monitoring Well (Destroyed)
- VW3 Vapor Well
- RW7 Recovery Monitoring Well
- Interceptor Trench
- AS6 Air Sparging/Vapor Extraction Well
- i = Interpreted magnitude of hydraulic gradient

Groundwater Concentrations in ug/L  
Sept. 18, 1995

<2.0
<2.0
<2.0
<2.0
1,300
<10
1,900
ND
1,200

- Benzene
- Toluene
- Ethylbenzene
- Xylene
- Total Petroleum Hydrocarbons as gasoline
- Methyl tert-butyl ether
- Total Extractable Petroleum Hydrocarbons as diesel
- Volatile Organic Compounds
- Stoddard Solvent

- ND = Not Detected
- NA = Not Analyzed
- SH = Sheen



**GENERALIZED SITE PLAN**

FORMER EXXON SERVICE STATION 7-3006  
720 High Street  
Oakland, California

PROJECT NO.

2010

PLATE

2

DATE 10/02/95

**ATTACHMENT A**  
**GROUNDWATER SAMPLING PROTOCOL**

## GROUNDWATER SAMPLING PROTOCOL

The static water level and separate phase product level, if present, in each well that contained water and/or separate phase product are measured with a ORS Interface Probe, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater gradient, depth to water (DTW) levels are subtracted from wellhead elevations.

Water samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon<sup>®</sup> bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable separate phase hydrocarbon product or sheen. Any separate phase product is removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until stabilization of the temperature, pH, and conductivity are obtained. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples". The quantity of water purged from each well is calculated as follows:

1 well casing volume =  $\pi r^2 h (7.48)$  where:

- r = radius of the well casing in feet.
- h = column of water in the well in feet (depth to bottom - depth to water)
- 7.48 = conversion constant from cubic feet to gallons

gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover to at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples". Water samples were collected with a new, disposable Teflon bailer, and were carefully poured into 40-milliliter (ml) glass vials, which are filled so as to produce a positive meniscus. Each vial is preserved with hydrochloric acid, sealed with a cap containing a Teflon<sup>®</sup> septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

**ATTACHMENT B**

**LABORATORY ANALYSIS REPORTS  
AND CHAIN OF CUSTODY RECORDS**

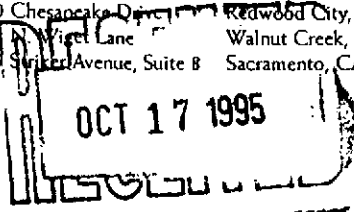


**Sequoia  
Analytical**

680 Chesapeake Drive, Redwood City, CA 94063  
 401 Alameda Lane, Walnut Creek, CA 94598  
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FAX (415) 364-9233  
 FAX (510) 988-9673  
 FAX (916) 921-0100



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-10-MW10 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-01	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/26/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC0923950HBPEXA  
 Instrument ID: GCHP4A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	111

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*VMT Clark*  
 Vickie Tague Clark  
 Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-10-MW10 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-01	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/21/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC092195BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	74

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager







Environmental Resolutions Client Proj. ID: 201013, Exxon 7-3006 Sampled: 09/18/95  
359 Bel Marin Keys, Suite 20 Sample Descript: W-10-MW1 Received: 09/19/95  
Novato, CA 94949 Matrix: LIQUID Extracted: 09/23/95  
Attention: Marc Briggs Analysis Method: EPA 8015 Mod Analyzed: 09/27/95  
Lab Number: 9509C02-02 Reported: 09/29/95  
QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	82
Chromatogram Pattern: Unidentified HC		C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	83

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager







Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-10-MW1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-02	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/21/95 Reported: 09/29/95
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QC Batch Number: GC092195BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	6.0
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	72

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949 Attention: Marc Briggs	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-18-MW9 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-03	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/27/95 Reported: 09/29/95
---	---	--

QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	60 C9-C24
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 169 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-18-MW9 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-03	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/21/95 Reported: 09/29/95
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QC Batch Number: GC092195BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	77

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-12-MW11 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-04	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/27/95 Reported: 09/29/95
---	--	--

QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	56 C9-C24
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 91

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-12-MW11 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-04	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/21/95 Reported: 09/29/95
---	--	---

QC Batch Number: GC092195BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	32
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	80

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-15-MW14 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-05	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/27/95 Reported: 09/29/95
---	--	--

QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

### Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	1900 C9-C24
<b>Surrogates</b> n-Pentacosane (C25)	<b>Control Limits %</b> 50                      150	<b>% Recovery</b> 107

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-15-MW14 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-05	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/27/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

**Fuel Fingerprint : Stoddard Solvent**

Analyte	Detection Limit ug/L	Sample Results ug/L
Extract HC as Stoddard Solvent Chromatogram Pattern:	50	1200 Stod Solv
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	107

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-15-MW14 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-05	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/23/95 Reported: 09/29/95
---	--	---

QC Batch Number: GC092295BTEX02B  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	200	1300
Methyl t-Butyl Ether	10	N.D.
Benzene	2.0	N.D.
Toluene	2.0	N.D.
Ethyl Benzene	2.0	N.D.
Xylenes (Total)	2.0	3.0
Chromatogram Pattern: Unidentified HC		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	107

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager







Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-15-MW14 Matrix: LIQUID Analysis Method: EPA 601 Lab Number: 9509C02-05	Sampled: 09/18/95 Received: 09/19/95  Analyzed: 09/23/95 Reported: 09/29/95
---	---	---

QC Batch Number: GC092295060108A  
Instrument ID: GCHP8

**Purgeable Halocarbons (EPA 601)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	1.3	N.D.
Bromoform	1.3	N.D.
Bromomethane	2.5	N.D.
Carbon Tetrachloride	1.3	N.D.
Chlorobenzene	1.3	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl ether	2.5	N.D.
Chloroform	1.3	N.D.
Chloromethane	2.5	N.D.
Dibromochloromethane	1.3	N.D.
1,2-Dichlorobenzene	1.3	N.D.
1,3-Dichlorobenzene	1.3	N.D.
1,4-Dichlorobenzene	1.3	N.D.
1,1-Dichloroethane	1.3	N.D.
1,2-Dichloroethane	1.3	N.D.
1,1-Dichloroethene	1.3	N.D.
cis-1,2-Dichloroethene	1.3	N.D.
trans-1,2-Dichloroethene	1.3	N.D.
1,2-Dichloropropane	1.3	N.D.
cis-1,3-Dichloropropene	1.3	N.D.
trans-1,3-Dichloropropene	1.3	N.D.
Methylene chloride	13	N.D.
1,1,2,2-Tetrachloroethane	1.3	N.D.
Tetrachloroethene	1.3	N.D.
1,1,1-Trichloroethane	1.3	N.D.
1,1,2-Trichloroethane	1.3	N.D.
Trichloroethene	1.3	N.D.
Trichlorofluoromethane	1.3	N.D.
Vinyl chloride	2.5	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-2-fluorobenzene	70 130	98

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

*WMT Clark*

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-16-MW7 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9509C02-06	Sampled: 09/18/95 Received: 09/19/95 Extracted: 09/23/95 Analyzed: 09/27/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC0923950HBPEXA  
Instrument ID: GCHP4B

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Unidentified HC	50	1100 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	124

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager







Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-16-MW7 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C02-06	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/22/95 Reported: 09/29/95
Attention: Marc Briggs		


QC Batch Number: GC092295BTEX20A  
 Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1800
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	17
Toluene	5.0	N.D.
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		Gas
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	124

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 \_\_\_\_\_  
 Vickie Tague Clark  
 Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201013, Exxon 7-3006 Sample Descript: W-16-MW7 Matrix: LIQUID Analysis Method: EPA 601 Lab Number: 9509C02-06	Sampled: 09/18/95 Received: 09/19/95  Analyzed: 09/23/95 Reported: 09/29/95
---	--	---

QC Batch Number: GC092295060108A  
Instrument ID: GCHP8

Purgeable Halocarbons (EPA 601)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	1.3	N.D.
Bromoform	1.3	N.D.
Bromomethane	2.5	N.D.
Carbon Tetrachloride	1.3	N.D.
Chlorobenzene	1.3	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl ether	2.5	N.D.
Chloroform	1.3	N.D.
Chloromethane	2.5	N.D.
Dibromochloromethane	1.3	N.D.
1,2-Dichlorobenzene	1.3	N.D.
1,3-Dichlorobenzene	1.3	N.D.
1,4-Dichlorobenzene	1.3	N.D.
1,1-Dichloroethane	1.3	N.D.
1,2-Dichloroethane	1.3	N.D.
1,1-Dichloroethene	1.3	N.D.
cis-1,2-Dichloroethene	1.3	N.D.
trans-1,2-Dichloroethene	1.3	N.D.
1,2-Dichloropropane	1.3	N.D.
cis-1,3-Dichloropropene	1.3	N.D.
trans-1,3-Dichloropropene	1.3	N.D.
Methylene chloride	1.3	N.D.
1,1,2,2-Tetrachloroethane	1.3	N.D.
Tetrachloroethene	1.3	N.D.
1,1,1-Trichloroethane	1.3	N.D.
1,1,2-Trichloroethane	1.3	N.D.
Trichloroethene	1.3	N.D.
Trichlorofluoromethane	1.3	N.D.
Vinyl chloride	2.5	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-2-fluorobenzene	70 130	104

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949 Attention: Marc Briggs	Client Project ID: 201013, Exxon 7-3006 Matrix: Liquid Work Order #: 9509C02 -01-06	Reported: Sep 29, 1995
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**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b> Diesel
<b>QC Batch#:</b> GC0923950HBPEXA
<b>Analy. Method:</b> EPA 8015M
<b>Prep. Method:</b> EPA 3510

**Analyst:** T. Olive  
**MS/MSD #:** 9509C0201  
**Sample Conc.:** N.D.  
**Prepared Date:** 9/23/95  
**Analyzed Date:** 9/26/95  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**Result:** 870  
**MS % Recovery:** 87

**Dup. Result:** 870  
**MSD % Recov.:** 87

**RPD:** 0.0  
**RPD Limit:** 0-50

**LCS #:** BLK092395  
**Prepared Date:** 9/23/95  
**Analyzed Date:** 9/26/95  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**LCS Result:** 970  
**LCS % Recov.:** 97

<b>MS/MSD</b>	
<b>LCS</b>	38-122
<b>Control Limits</b>	

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL**

*VTC Clark*

Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9509C02.EEE <1>





# Sequoia Analytical

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 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Environmental Resolutions Client Project ID: 201013, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949  
 Attention: Marc Briggs Work Order #: 9509C02-01-04 Reported: Sep 29, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092195BTEX20A	GC092195BTEX20A	GC092195BTEX20A	GC092195BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950977409	950977409	950977409	950977409
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/21/95	9/21/95	9/21/95	9/21/95
Analyzed Date:	9/21/95	9/21/95	9/21/95	9/21/95
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	11	11	33
MS % Recovery:	110	110	110	110
Dup. Result:	10	10	10	31
MSD % Recov.:	100	100	100	103
RPD:	9.5	9.5	9.5	6.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

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SEQUOIA ANALYTICAL

Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9509C02.EEE <2>





# Sequoia Analytical

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 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Environmental Resolutions Client Project ID: 201013, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949  
 Attention: Marc Briggs Work Order #: 9509C02-05 Reported: Sep 29, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092295BTEX02B	GC092295BTEX02B	GC092295BTEX02B	GC092295BTEX02B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950991705	950991705	950991705	950991705
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/22/95	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.0	9.4	9.4	28
MS % Recovery:	90	94	94	93
Dup. Result:	13	9.1	9.1	27
MSD % Recov.:	130	91	91	90
RPD:	36	3.2	3.2	3.6
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**

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SEQUOIA ANALYTICAL

Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9509C02.EEE <3>







# Sequoia Analytical

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FAX (916) 921-0100

Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Project ID: 201013, Exxon 7-3006  
Matrix: Liquid

Attention: Marc Briggs

Work Order #: 9509C02-06

Reported: Sep 29, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092295BTEX20A	GC092295BTEX20A	GC092295BTEX20A	GC092295BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950977401	950977401	950977401	950977401
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/22/95	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	11	11	32
MS % Recovery:	110	110	110	107
Dup. Result:	11	11	11	33
MSD % Recov.:	110	110	110	110
RPD:	0.0	0.0	0.0	3.1
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD				
LCS	71-133	72-128	72-130	71-120
Control Limits				

SEQUOIA ANALYTICAL

*VMT Clark*

Vickie Tague Clark  
Project Manager

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9509C02.EEE <4>





# Sequoia Analytical

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FAX (916) 921-0100

Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Project ID: 201013, Exxon 7-3006  
Matrix: Liquid

Attention: Marc Briggs

Work Order #: 9509C02-05-06

Reported: Sep 29, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
QC Batch#:	GC092295060108A	GC092295060108A	GC092295060108A
Analy. Method:	EPA 601	EPA 601	EPA 601
Prep. Method:	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Singh	J. Singh	J. Singh
MS/MSD #:	95099803	95099803	95099803
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP8	GCHP8	GCHP8
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	25	21	24
MS % Recovery:	100	84	96
Dup. Result:	26	22	25
MSD % Recov.:	104	88	100
RPD:	3.9	4.7	4.1
RPD Limit:	0-50	0-50	0-50

LCS #:	BLK092295	BLK092295	BLK092295
Prepared Date:	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP8	GCHP8	GCHP8
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	25	21	24
LCS % Recov.:	100	84	96

MS/MSD			
LCS	28-167	35-146	38-150
Control Limits			

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\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

SEQUOIA ANALYTICAL

*VMT Clark*

Vickie Tague Clark  
Project Manager





Sequoia Analytical  
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Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

# EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

## CHAIN OF CUSTODY

Consultant's Name: Environmental Resolutions Inc

Address: 359 Bel Marin Keys Suite 20 Novato Ca 94949 Site Location: 720 High Street

Project #: 7-3006 Consultant Project #: 201013 Consultant Work Release #: 19432.503

Project Contact: Mara Briggs Phone #: 415 382 9105 Laboratory Work Release #:

EXXON Contact: Marla Guenster Phone #: 510 246 8776 EXXON RAS #: 7-3006

Sampled by (print): Scott Graham Sampler's Signature: Scott Graham Oakland, Ca

Shipment Method: Air Bill #:

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

ANALYSIS REQUIRED 9509C02

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	MTBE	Temperature: _____	Inbound Seal: Yes No	Outbound Seal: Yes No
W-10-MW10	9/18/95	16:10	Water	HCL ICE	3		X			X		1	
W-10-MW10		16:15		ICE	2			X				1	
W-10-MW1		16:20		HCL ICE	3		X			X		2	
W-10-MW1		16:25		ICE	2			X				1	
W-18-MW9		16:35		HCL ICE	2		X			X		3	
W-18-MW9		16:40		ICE	2			X				1	
W-12-MW11		15:50		HCL ICE	3		X			X		4	
W-12-MW11		16:55		ICE	2			X				1	
<del>W-15-MW11</del>	<del>17:05</del>	<del>17:05</del>	<del>Water</del>	<del>HCL ICE</del>	<del>2</del>								

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>Scott Graham</u>	9.19	17:45	<u>Don J. Tr</u>	9.19	17:45	
<u>Don J. Tr</u>	9.19	17:30	<u>my</u>	9/19/95	1435	Sequoia

Pink - Client  
Yellow - Sequoia  
White - Sequoia



Sequoia Analytical  
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Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

# EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

## CHAIN OF CUSTODY

Consultant's Name: Environmental Resolutions Inc

Address: 359 Bel Marin Keys Suite 20 Novato Ca 94949 Site Location: 720 High Street

Project #: 7-3006 Consultant Project #: 201013 Consultant Work Release #: 19432503

Project Contact: Marc Briggs Phone #: 415 382 9105 Laboratory Work Release #:

EXXON Contact: Marla Guenster Phone #: 510 246 8776 EXXON RAS #: 7-3006

Sampled by (print): Scott Graham Sampler's Signature: [Signature] Oakland, Ca

Shipment Method: \_\_\_\_\_ Air Bill #: \_\_\_\_\_

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

ANALYSIS REQUIRED 959C02

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020 MTBE	TPH/ Diesel EPA 8015	TRPH S.M. 5520	Standard Solvent 3510/ 8015	Purgable <del>1005</del> Hold Carbon 601	Temperature: _____	
												Inbound Seal: Yes No	Outbound Seal: Yes No
W-15-MW14	9/18/95	17:10	Water	ICE	2			X					5
W-16-MW7	/	17:35	/	HCL ICE	9		X			X	X		+
W-16-MW7	/	17:40	/	ICE	2			X					6
W-15-MW14	9/18/95	17:05	Water	HCL ICE	9		X			X	X		+

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>	9-19	17:48	<u>[Signature]</u>	9-19	17:45	
<u>[Signature]</u>	9-19	17:50	<u>[Signature]</u>	9/19/95	1433	

Pink - Client

Yellow - Sequoia

White - Sequoia



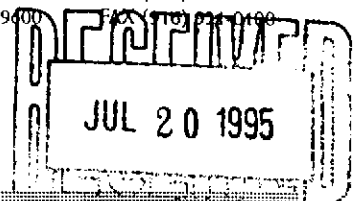
**Sequoia  
Analytical**

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Proj. ID: 201011X, Exxon 7-3006  
Sample Descript: A-EFF  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9507026-03

Sampled: 07/03/95  
Received: 07/03/95  
Analyzed: 07/03/95  
Reported: 07/05/95

Attention: Marc Briggs

QC Batch Number: GC070395BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	85

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

*VMT Clark*

Vickie Tague Clark  
Project Manager



**Sequoia  
Analytical**

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FAX (916) 921-0100

Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid

Work Order #: 9507026 03

Reported: Jul 17, 1995

### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC070395BTEX17A	GC070395BTEX17A	GC070395BTEX17A	GC070395BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9506E8405	9506E8405	9506E8405	9506E8405
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/3/95	7/3/95	7/3/95	7/3/95
Analyzed Date:	7/3/95	7/3/95	7/3/95	7/3/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	30
MS % Recovery:	100	100	100	100
Dup. Result:	10	11	11	32
MSD % Recov.:	100	110	110	107
RPD:	0.0	9.5	9.5	6.5
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

**Please Note:**

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**SEQUOIA ANALYTICAL**

*VTC Clark*  
Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9507026.EEE <1>





Sequoia  
Analytical

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(510) 888-9400 FAX (510) 848-9678  
(916) 888-9600 FAX (916) 921-0100  
**JUL 25 1995**

Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: A-INF Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9507394-01	Sampled: 07/10/95 Received: 07/11/95 Analyzed: 07/12/95 Reported: 07/14/95
Attention: Marc Briggs		

QC Batch Number: GC071295BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	230
Benzene	0.50	2.8
Toluene	0.50	3.3
Ethyl Benzene	0.50	1.1
Xylenes (Total)	0.50	5.4
Chromatogram Pattern:		Gas
Unidentified HC		< C8
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	123

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: A-INT Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9507394-02	Sampled: 07/10/95 Received: 07/11/95 Analyzed: 07/12/95 Reported: 07/14/95
Attention: Marc Briggs		

QC Batch Number: GC071295BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	25	120
Benzene	0.25	2.8
Toluene	0.25	8.4
Ethyl Benzene	0.25	1.5
Xylenes (Total)	0.25	7.8
Chromatogram Pattern: Unidentified HC		Gas < C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	99

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: A-EFF Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9507394-03	Sampled: 07/10/95 Received: 07/11/95 Analyzed: 07/12/95 Reported: 07/14/95
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QC Batch Number: GC071295BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
<b>Toluene</b>	<b>0.10</b>	<b>0.11</b>
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210



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Vickie Tague Clark  
Project Manager



# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid

Work Order #: 9507394 -01

Reported: Jul 21, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071295BTEX17A	GC071295BTEX17A	GC071295BTEX17A	GC071295BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950712901	950712901	950712901	950712901
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/12/95	7/12/95	7/12/95	7/12/95
Analyzed Date:	7/12/95	7/12/95	7/12/95	7/12/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.8	8.8	8.8	27
MS % Recovery:	88	88	88	90
Dup. Result:	9.1	9.2	9.3	28
MSD % Recov.:	91	92	93	93
RPD:	3.4	4.4	5.5	3.6
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9507394.EEE <1>



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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid

Work Order #: 9507394-02

Reported: Jul 21, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071295BTEX02A	GC071295BTEX02A	GC071295BTEX02A	GC071295BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950712901	950712901	950712901	950712901
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/12/95	7/12/95	7/12/95	7/12/95
Analyzed Date:	7/12/95	7/12/95	7/12/95	7/12/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.0	9.0	9.1	27
MS % Recovery:	90	90	91	90
Dup. Result:	8.7	8.7	8.7	26
MSD % Recov.:	87	87	87	87
RPD:	3.4	3.4	4.5	3.8
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9507394.EEE <2>



# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid  
Work Order #: 9507394-03

Reported: Jul 21, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071295BTEX03A	GC071295BTEX03A	GC071295BTEX03A	GC071295BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950712904	950712904	950712904	950712904
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/12/95	7/12/95	7/12/95	7/12/95
Analyzed Date:	7/12/95	7/12/95	7/12/95	7/12/95
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.9	9.0	8.9	27
MS % Recovery:	89	90	89	90
Dup. Result:	9.3	9.3	9.2	27
MSD % Recov.:	93	93	92	90
RPD:	4.4	3.3	3.3	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9507394.EEE <3>



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## CHAIN OF CUSTODY

Consultant's Name: <u>Environmental Resolutions Inc</u>		Page <u>1</u> of <u>1</u>
Address: <u>359 Bel Mario Keys Blvd Suite 20 Novato 94944</u>		Site Location: <u>720 High Street</u>
Project #: <u>201011X</u>	Consultant Project #:	Consultant Work Release #:
Project Contact: <u>Marc Briggs</u>	Phone #: <u>415-382-9105</u>	Laboratory Work Release #: <u>19432503</u>
EXXON Contact: <u>Marla Guenster</u>	Phone #: <u>510-246-8876</u>	EXXON RAS #: <u>7-3006</u>
Sampled by (print): <u>Scott Graham</u>	Sampler's Signature: <u>[Signature]</u>	<u>Oakland Ca</u>
Shipment Method:	Air Bill #:	

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

ANALYSIS REQUIRED 9507394

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	Temperature: _____	
										Inbound Seal: Yes No	Outbound Seal: Yes No
A-INF	7/10/95	14:38	Air	none	2	01 A, B	X				
A-INT	/	14:32	/	/	2	02	X				
A-EFF	/	14:35	/	/	2	03	X				

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>			<u>Ralph Bonelle / Sequoia</u>	7/11/95	9:50	
<u>Ralph Bonelle</u>	7-11-95	1245	<u>[Signature]</u>	7/11/95	12:30	

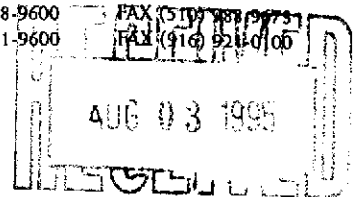
Pink - Client  
Yellow - Sequoia  
White - Sequoia



**Sequoia  
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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-INF 1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9507538-01	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/15/95 Reported: 07/24/95
Attention: Marc Briggs		

QC Batch Number: GC071495BTEX17B  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	1600
Benzene	10	530
Toluene	10	15
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	59
Chromatogram Pattern:		Gas
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	76

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager



Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Proj. ID: 201011X, Exxon 7-3006  
Sample Descript: W-INF 2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9507538-02

Sampled: 07/11/95  
Received: 07/12/95  
Analyzed: 07/16/95  
Reported: 07/24/95

Attention: Marc Briggs

QC Batch Number: GC071695BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	630
Benzene	5.0	270
Toluene	5.0	7.0
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	25
Chromatogram Pattern:		Gas
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	86

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-INT 1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9507538-03	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/15/95 Reported: 07/24/95
Attention: Marc Briggs		

QC Batch Number: GC071495BTEX17B  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	73

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager



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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-INT 2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9507538-04	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/13/95 Reported: 07/24/95
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QC Batch Number: GC071395BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	80

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-EFF Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9507538-05	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/13/95 Reported: 07/24/95
Attention: Marc Briggs		

QC Batch Number: GC071395BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	77

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager



Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Proj. ID: 201011X, Exxon 7-3006  
Sample Descript: W-EFF  
Matrix: LIQUID  
Analysis Method: EPA 624  
Lab Number: 9507538-05

Sampled: 07/11/95  
Received: 07/12/95  
Analyzed: 07/19/95  
Reported: 07/24/95

Attention: Marc Briggs

QC Batch Number: MS0719958240F3A  
Instrument ID: F3

### Purgeables (EPA 624)

Analyte	Detection Limit ug/L	Sample Results ug/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
Dibromochloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans-1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	2.0	N.D.



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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-EFF Matrix: LIQUID Analysis Method: EPA 624 Lab Number: 9507538-05	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/19/95 Reported: 07/24/95
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QC Batch Number: MS0719958240F3A  
Instrument ID: F3

Analyte	Detection Limit ug/L	Sample Results ug/L
Total Xylenes	2.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1,2-Dichloroethane-d4	76	114
Toluene-d8	88	110
4-Bromofluorobenzene	86	115

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

  
 \_\_\_\_\_  
 Vickie Tague Clark  
 Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: W-EFF Matrix: LIQUID Analysis Method: Title 22 Lab Number: 9507538-05	Sampled: 07/11/95 Received: 07/12/95 Analyzed: 07/14/95 Reported: 07/24/95
Attention: Marc Briggs		

Priority Pollutants:Metals

Analyte	Detection Limit ug/L	Sample Results ug/L
Antimony, Sb	5.0	-
Arsenic, As	5.0	41
Beryllium, Be	5.0	-
Cadmium, Cd	5.0	N.D.
Chromium, Cr	5.0	N.D.
Copper, Cu	5.0	N.D.
Lead, Pb	5.0	N.D.
Mercury, Hg	0.20	N.D.
Nickel, Ni	5.0	12
Selenium, Se	5.0	-
Silver, Ag	5.0	N.D.
Thallium, Tl	5.0	-
Zinc, Zn	5.0	8.0

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager



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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949 Attention: Marc Briggs	Client Project ID: 201011X, Exxon 7-3006 Matrix: Liquid Work Order #: 9507538 -05	Reported: Aug 2, 1995
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## QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0714956010MDA	ME0714956010MDA	ME0714956010MDA	ME0714956010MDA
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010

Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
MS/MSD #:	950745903	950745903	950745903	950745903
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/14/95	7/14/95	7/14/95	7/14/95
Analyzed Date:	7/14/95	7/14/95	7/14/95	7/14/95
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.93	0.90	0.87	0.87
MS % Recovery:	93	90	87	87
Dup. Result:	0.94	0.91	0.88	0.88
MSD % Recov.:	94	91	88	88
RPD:	1.1	1.1	1.1	1.1
RPD Limit:	0-30	0-30	0-30	0-30

LCS #:	BLK071495	BLK071495	BLK071495	BLK071495
Prepared Date:	7/14/95	7/14/95	7/14/95	7/14/95
Analyzed Date:	7/14/95	7/14/95	7/14/95	7/14/95
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.90	0.90	0.87	0.87
LCS % Recov.:	90	90	87	87

MS/MSD LCS Control Limits	75-125	75-125	75-125	75-125
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**Please Note:**

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SEQUOIA ANALYTICAL

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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# Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
 404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Environmental Resolutions Client Project ID: 201011X, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949  
 Attention: Marc Briggs Work Order #: 9507538-05 Reported: Aug 2, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Arsenic	Selenium	Lead	Nickel	Mercury
QC Batch#:	ME0714957000MDA	ME0714957000MDA	ME0714957000MDA	ME0714957000MDA	ME0717952451M4B
Analy. Method:	EPA 206.2	EPA 270.2	EPA 239.2	EPA 249.2	EPA 245.1
Prep. Method:	EPA 3020	EPA 3020	EPA 3020	EPA 3020	EPA 245.1

Analyst:	W. Thant	W. Thant	J. Jencks	W. Thant	M. Rocklein
MS/MSD #:	950745903	950745903	950745903	950745903	950740401
Sample Conc.:	N.D.	N.D.	N.D.	0.0060	N.D.
Prepared Date:	7/14/95	7/14/95	7/14/95	7/14/95	7/17/95
Analyzed Date:	7/14/95	7/17/95	7/14/95	7/19/95	7/18/95
Instrument I.D.#:	MTJA3	MTJA3	MTJA1	MTJA1	MPE4
Conc. Spiked:	0.050 mg/L	0.050 mg/L	0.050 mg/L	0.050 mg/L	0.0040 mg/L
Result:	0.060	0.053	0.040	0.057	0.0040
MS % Recovery:	120	106	80	102	100
Dup. Result:	0.060	0.053	0.040	0.056	0.0040
MSD % Recov.:	120	106	80	100	100
RPD:	0.0	0.0	0.0	2.0	0.0
RPD Limit:	0-30	0-30	0-30	0-30	0-30

LCS #:	BLK071495	BLK071495	BLK071495	BLK071495	LCS071795
Prepared Date:	7/14/95	7/14/95	7/14/95	7/14/95	7/17/95
Analyzed Date:	7/14/95	7/17/95	7/14/95	7/19/95	7/18/95
Instrument I.D.#:	MTJA3	MTJA3	MTJA1	MTJA1	MPE4
Conc. Spiked:	0.050 mg/L	0.050 mg/L	0.050 mg/L	0.050 mg/L	0.0040 mg/L
LCS Result:	0.054	0.052	0.058	0.051	0.0040
LCS % Recov.:	108	104	116	102	100

MS/MSD					
LCS	75-125	75-125	75-125	75-125	75-125
Control Limits					

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SEQUOIA ANALYTICAL

*[Signature]*  
 Vickie Tague Clark  
 Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9507538.EEE <2>





# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid

Work Order #: 9507538-01, 3

Reported: Aug 2, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071495BTEX17B	GC071495BTEX17B	GC071495BTEX17B	GC071495BTEX17B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	950711803	950711803	950711803	950711803
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/15/95	7/15/95	7/15/95	7/15/95
Analyzed Date:	7/15/95	7/15/95	7/15/95	7/15/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.0	8.3	8.1	24
MS % Recovery:	80	83	81	80
Dup. Result:	8.1	8.2	8.2	24
MSD % Recov.:	81	82	82	80
RPD:	1.2	1.2	1.2	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

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SEQUOIA ANALYTICAL

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9507538.EEE <3>



# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid  
Work Order #: 9507538-02

Reported: Aug 2, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071695BTEX17A	GC071695BTEX17A	GC071695BTEX17A	GC071695BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	950712905	950712905	950712905	950712905
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/16/95	7/16/95	7/16/95	7/16/95
Analyzed Date:	7/16/95	7/16/95	7/16/95	7/16/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.6	9.6	9.8	29
MS % Recovery:	96	96	98	97
Dup. Result:	9.8	9.8	9.9	29
MSD % Recov.:	98	98	99	97
RPD:	2.1	2.1	1.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

**Please Note:**

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# Sequoia Analytical

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FAX (510) 988-9673  
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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid  
Work Order #: 9507538-04, 5

Reported: Aug 2, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071395BTEX17A	GC071395BTEX17A	GC071395BTEX17A	GC071395BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950712901	950712901	950712901	950712901
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/13/95	7/13/95	7/13/95	7/13/95
Analyzed Date:	7/13/95	7/13/95	7/13/95	7/13/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	11	11	32
MS % Recovery:	110	110	110	107
Dup. Result:	12	11	12	34
MSD % Recov.:	120	110	120	113
RPD:	8.7	0.0	8.7	6.1
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

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SEQUOIA ANALYTICAL

*Vickie Tagne Clark for*  
Vickie Tagne Clark  
Project Manager

\*\* MS= Matrix Spike, MSD= MS Duplicate, RPD= Relative % Difference

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# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid  
Work Order #: 9507538-05

Reported: Aug 2, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
QC Batch#:	MS0719958240F3A	MS0719958240F3A	MS0719958240F3A	MS0719958240F3A	MS0719958240F3A
Analy. Method:	EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 8240
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	L. Zhu	L. Zhu	L. Zhu	L. Zhu	L. Zhu
MS/MSD #:	950753805	950753805	950753805	950753805	950753805
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N/A	N/A	N/A	N/A	N/A
Analyzed Date:	7/19/95	7/19/95	7/19/95	7/19/95	7/19/95
Instrument I.D.#:	F3	F3	F3	F3	F3
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
Result:	45	53	49	53	52
MS % Recovery:	90	106	98	106	104
Dup. Result:	48	54	51	54	53
MSD % Recov.:	96	108	102	108	106
RPD:	6.5	1.9	4.0	1.9	1.9
RPD Limit:	0-50	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-	-
Prepared Date:	-	-	-	-	-
Analyzed Date:	-	-	-	-	-
Instrument I.D.#:	-	-	-	-	-
Conc. Spiked:	-	-	-	-	-
LCS Result:	-	-	-	-	-
LCS % Recov.:	-	-	-	-	-

MS/MSD					
LCS	DL-234	71-157	37-151	47-150	37-160
Control Limits					

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SEQUOIA ANALYTICAL

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

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Sequoia Analytical  
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# EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

## CHAIN OF CUSTODY

Page 1 of 1

<b>Consultant's Name:</b> <u>Environmental Science Associates</u>		<b>Site Location:</b> <u>730 H. J. ...</u>	
<b>Address:</b> <u>2000 ...</u>		<b>Consultant Work Release #:</b> <u>19432104</u>	
<b>Project #:</b> <u>200004</u>	<b>Consultant Project #:</b> <u>...</u>	<b>Laboratory Work Release #:</b>	
<b>Project Contact:</b> <u>M. ...</u>	<b>Phone #:</b> <u>...</u>	<b>EXXON RAS #:</b> <u>7 00</u>	
<b>EXXON Contact:</b> <u>M. ...</u>	<b>Phone #:</b> <u>713-246-8776</u>	<b>Sampler's Signature:</b> <u>[Signature]</u>	
<b>Sampled by (print):</b> <u>[Signature]</u>	<b>Air Bill #:</b>	<b>Shipment Method:</b>	

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

**ANALYSIS REQUIRED** 990738

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/8015/8020	TPH/Diesel EPA 8015	TRPH S.M. 5520	C	M	Temperature: _____	
												Inbound Seal: Yes No	Outbound Seal: Yes No
W-INT1	7/10/00	14:00	...	...	...		X						Asenic
W-INT2	7/10/00	14:00	...	...	...		X						Cadmium 3 1
W-INT3	7/10/00	14:00	...	...	...		X						Copper Cyanide
W-INT4	7/10/00	14:00	...	...	...		X						Lead Mercury
W-EFF	7/10/00	14:00	...	...	...		X			X			Nickel Silver
W-EFF	7/10/00	14:00	...	...	...		X			X			ZINC

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>			<u>[Signature]</u>	7/10/00	11:00	
<u>[Signature]</u>			<u>[Signature]</u>	7/10/00	12:00	

Pink - Client

Yellow - Sequoia

White - Sequoia



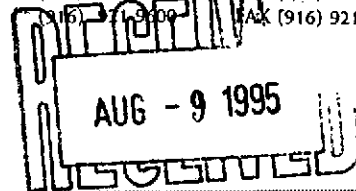
**Sequoia  
Analytical**

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Environmental Resolutions	Client Proj. ID: 201011X, Exxon 7-3006	Sampled: 07/25/95
359 Bel Marin Keys, Suite 20	Sample Descript: A-INF	Received: 07/26/95
Novato, CA 94949	Matrix: AIR	Analyzed: 07/26/95
Attention: Marc Briggs	Analysis Method: 8015Mod/8020	Reported: 07/27/95
	Lab Number: 9507F88-01	

QC Batch Number: GC072695BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	67
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	0.51
Chromatogram Pattern:		Gas
Unidentified HC		< C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	97

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: A-INT Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9507F88-02	Sampled: 07/25/95 Received: 07/26/95 Analyzed: 07/26/95 Reported: 07/27/95
Attention: Marc Briggs		

QC Batch Number: GC072695BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	N.D.
Benzene	1.0	N.D.
Toluene	1.0	N.D.
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011X, Exxon 7-3006 Sample Descript: A-EFF Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9507F88-03	Sampled: 07/25/95 Received: 07/26/95 Analyzed: 07/26/95 Reported: 07/27/95
---	--	---


QC Batch Number: GC072695BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
Vickie Tague Clark  
Project Manager





# Sequoia Analytical

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006  
Matrix: Liquid

Work Order #: 9507F88 -01, 2

Reported: Aug 3, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC072695BTEX02A	GC072695BTEX02A	GC072695BTEX02A	GC072695BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9507B4501	9507B4501	9507B4501	9507B4501
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/26/95	7/26/95	7/26/95	7/26/95
Analyzed Date:	7/26/95	7/26/95	7/26/95	7/26/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.6	9.5	9.9	30
MS % Recovery:	96	95	99	100
Dup. Result:	9.4	9.3	9.5	28
MSD % Recov.:	94	93	95	93
RPD:	2.1	2.1	4.1	6.9
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

### Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

  
Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9507F88.EEE <1>



# Sequoia Analytical

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FAX (916) 921-0100

Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: 201011X, Exxon 7-3006

Matrix: Liquid

Work Order #: 9507F88-03

Reported: Aug 3, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC072695BTEX03A	GC072695BTEX03A	GC072695BTEX03A	GC072695BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9507B4501	9507B4501	9507B4501	9507B4501
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/26/95	7/26/95	7/26/95	7/26/95
Analyzed Date:	7/26/95	7/26/95	7/26/95	7/26/95
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.4	9.4	9.3	28
MS % Recovery:	94	94	93	93
Dup. Result:	9.5	9.5	9.0	28
MSD % Recov.:	95	95	90	93
RPD:	1.1	1.1	3.3	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9507F88.EEE <2>





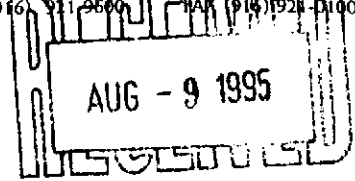
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FAX (916) 928-0100



Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Proj. ID: Exxon 7-3006, 201011X  
Sample Descript: A-Inf  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9508008-01

Sampled: 07/31/95  
Received: 08/01/95

Attention: Marc Braggs

Analyzed: 08/02/95  
Reported: 08/04/95

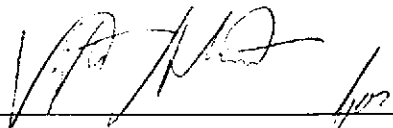
QC Batch Number: GC080295BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	500
Benzene	1.0	14
Toluene	1.0	12
Ethyl Benzene	1.0	2.5
Xylenes (Total)	1.0	16
Chromatogram Pattern: Gas & Unidentified HC		Gas < C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	125

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Vickie Tague Clark  
Project Manager



Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949

Client Proj. ID: Exxon 7-3006, 201011X  
Sample Descript: A-Int1  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9508008-02

Sampled: 07/31/95  
Received: 08/01/95  
Analyzed: 08/02/95  
Reported: 08/04/95

QC Batch Number: GC080295BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	12
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern: Unidentified HC		<C7
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	101

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: Exxon 7-3006, 201011X Sample Descript: A-Eff Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9508008-03	Sampled: 07/31/95 Received: 08/01/95 Analyzed: 08/02/95 Reported: 08/04/95
Attention: Marc Braggs		

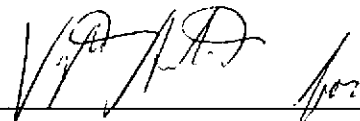
QC Batch Number: GC080295BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	87

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
 \_\_\_\_\_  
 Vickie Tague Clark  
 Project Manager



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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: Exxon 7-3006, 201011X  
Matrix: Liquid

Work Order #: 9508008 -01, 03

Reported: Aug 7, 1995

### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC080295BTEX17A	GC080295BTEX17A	GC080295BTEX17A	GC080295BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950716205	950716205	950716205	950716205
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/2/95	8/2/95	8/2/95	8/2/95
Analyzed Date:	8/2/95	8/2/95	8/2/95	8/2/95
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.6	9.7	9.7	29
MS % Recovery:	96	97	97	97
Dup. Result:	9.8	9.9	9.9	30
MSD % Recov.:	98	99	99	100
RPD:	2.1	2.0	2.0	3.4
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS	71-133	72-128	72-130	71-120
Control Limits				

SEQUOIA ANALYTICAL

*[Signature]*  
Vickie Tague Clark  
Project Manager

**Please Note:**

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\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Environmental Resolutions  
359 Bel Marin Keys, Suite 20  
Novato, CA 94949  
Attention: Marc Briggs

Client Project ID: Exxon 7-3006, 201011X  
Matrix: Liquid

Work Order #: 9508008-02

Reported: Aug 7, 1995

### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC080295BTEX02A	GC080295BTEX02A	GC080295BTEX02A	GC080295BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950716205	950716205	950716205	950716205
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/2/95	8/2/95	8/2/95	8/2/95
Analyzed Date:	8/2/95	8/2/95	8/2/95	8/2/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.5	8.4	8.4	26
MS % Recovery:	85	84	84	87
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	16	17	17	14
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL**

*Vickie Tague Clark*  
Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9508008.EEE <2>







**Sequoia  
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FAX (916) 921-0100

Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: A-Inf Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9509B32-01	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/20/95 Reported: 09/22/95
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QC Batch Number: GC092095BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	980
Benzene	1.0	13
Toluene	1.0	4.4
Ethyl Benzene	1.0	1.8
Xylenes (Total)	1.0	8.5
Chromatogram Pattern: Unidentified HC		Gas < C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	85

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Vickie Tague Clark  
Project Manager



# Sequoia Analytical

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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: A-Int Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9509B32-02	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/20/95 Reported: 09/22/95
Attention: Marc Briggs		

QC Batch Number: GC092095BTEX17A  
Instrument ID: GCHP17

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	92

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL** - ELAP #1210

Vickie Tague Clark  
Project Manager



# Sequoia Analytical

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Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: A-Eff Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9509B32-03	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/20/95 Reported: 09/22/95
Attention: Marc Briggs		

QC Batch Number: GC092095BTEX17A  
Instrument ID: GCHP17

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	87

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Vickie Tague Clark  
Project Manager

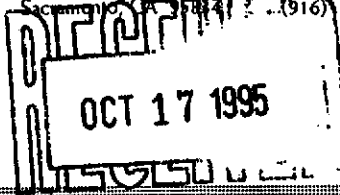


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FAX (916) 921-0100



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, <del>Exxon 7-3006</del> Sample Descript: W-Inf1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C00-01	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/22/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC092295BTEX21A  
Instrument ID: GCHP21

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1900
Benzene	5.0	590
Toluene	5.0	33
Ethyl Benzene	5.0	16
Xylenes (Total)	5.0	120
Chromatogram Pattern:		Gas
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	87

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*MT Clark*

Vickie Tague Clark  
Project Manager





Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: W-Inf2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C00-02	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/22/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC092295BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	130	490
Benzene	1.3	150
Toluene	1.3	7.6
Ethyl Benzene	1.3	3.1
Xylenes (Total)	1.3	30
Chromatogram Pattern:		Gas
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	70

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

Vickie Tague Clark  
Project Manager



Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: W-Int Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C00-03	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/22/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC092295BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	94

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*VMTC Clark*

Vickie Tague Clark  
Project Manager





**Sequoia  
Analytical**

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819 Striker Avenue, Suite 8	Sacramento, CA 95834	(916) 921-9600	FAX (916) 921-0100

Environmental Resolutions 359 Bel Marin Keys, Suite 20 Novato, CA 94949	Client Proj. ID: 201011, Exxon 7-3006 Sample Descript: W-Eff Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9509C00-04	Sampled: 09/18/95 Received: 09/19/95 Analyzed: 09/21/95 Reported: 09/29/95
Attention: Marc Briggs		

QC Batch Number: GC092195BTEX21A  
Instrument ID: GCHP21

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	81

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

*WMT Clark*

Vickie Tague Clark  
Project Manager







# Sequoia Analytical

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 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Environmental Resolutions Client Project ID: 201011, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949  
 Attention: Marc Briggs Work Order #: 9509C00 -01 Reported: Sep 29, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092295BTEX21A	GC092295BTEX21A	GC092295BTEX21A	GC092295BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950977401	950977401	950977401	950977401
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/22/95	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	31
MS % Recovery:	100	100	100	103
Dup. Result:	9.7	10	11	33
MSD % Recov.:	97	100	110	110
RPD:	3.0	0.0	9.5	6.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD				
LCS	71-133	72-128	72-130	71-120
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

*Vickie Clark*  
 Vickie Tague Clark  
 Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9509C00.EEE <1>





Environmental Resolutions Client Project ID: 201011, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949  
 Attention: Marc Briggs Work Order #: 9509C00-02-03 Reported: Sep 29, 1995

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092295BTEX20A	GC092295BTEX20A	GC092295BTEX20A	GC092295BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950977401	950977401	950977401	950977401
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/22/95	9/22/95	9/22/95	9/22/95
Analyzed Date:	9/22/95	9/22/95	9/22/95	9/22/95
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	11	11	32
MS % Recovery:	110	110	110	107
Dup. Result:	11	11	11	33
MSD % Recov.:	110	110	110	110
RPD:	0.0	0.0	0.0	3.1
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

*VTC Clark*

Vickie Tague Clark  
Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9509C00.EEE <2>





Environmental Resolutions Client Project ID: 201011, Exxon 7-3006  
 359 Bel Marin Keys, Suite 20 Matrix: Liquid  
 Novato, CA 94949 Work Order #: 9509C00-04 Reported: Sep 29, 1995  
 Attention: Marc Briggs

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC092195BTEX21A	GC092195BTEX21A	GC092195BTEX21A	GC092195BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950977409	950977409	950977409	950977409
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/21/95	9/21/95	9/21/95	9/21/95
Analyzed Date:	9/21/95	9/21/95	9/21/95	9/21/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.4	9.3	9.3	27
MS % Recovery:	94	93	93	90
Dup. Result:	9.5	9.5	9.3	27
MSD % Recov.:	95	95	93	90
RPD:	1.1	2.1	0.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50



LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**Please Note:**  
 The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL**

*Vickie Tague Clark*

Vickie Tague Clark  
 Project Manager

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9509C00.EEE <3>





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(415) 364-9600 • FAX (415) 364-9233

# EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

## CHAIN OF CUSTODY

Page 1 of 1

Consultant's Name: Environmental Resolutions Inc

Address: 359 Bel Maria Keys Suite 20 Novato Ca 94949 Site Location: 720 High Street

Project #: 7-3006 Consultant Project #: 201011 Consultant Work Release #: 19432503

Project Contact: Mara Briggs Phone #: 415 382 9105 Laboratory Work Release #:

EXXON Contact: Mara Guenster Phone #: 510 246 8776 EXXON RAS #: 7-3006

Sampled by (print): Peter Patro Sampler's Signature: [Signature] Oakland, Ca

Shipment Method: Air Bill #: [Signature]

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

ANALYSIS REQUIRED 950900

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	Temperature: _____	
										Inbound Seal: Yes No	Outbound Seal: Yes No
W-INF1	9/18/95		Water	HCE ICE	3		X				1
W-INF2	/	/	/	/	2		X				2
W-INT	/	/	/	/	3		X				3
W-EFF	/	/	/	/	2		X				4
A-INF	/	14:38	Air	none	1		X				
A-INT	/	14:40	/	none	1		X				
A-EFF	/	14:42	/	none	1		X				

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>	9-19	17:45	<u>Day J to</u>	9-19	12:45	
<u>Day J to</u>	9-19	2:30	<u>[Signature]</u>	9/19/95	1433	

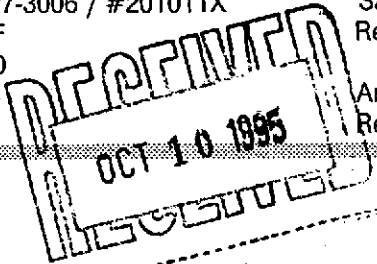
Pink - Client

Yellow - Sequoia

White - Sequoia



Environmental Resolutions, Inc. Client Project ID: Exxon #7-3006 / #201011X Sampled: Sep 25, 1995  
359 Bel Marin Keys Blvd. #20 Sample Descript: Air, A-INF Received: Sep 25, 1995  
Novato, CA 94949 Analysis Method: EPA 8240  
Attention: Mark Briggs Lab Number: 509-1703 Analyzed: Sep 26, 1995  
Reported: Sep 27, 1995



QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS (EPA 8240)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone.....	10	N.D.
<b>Benzene.....</b>	<b>2.0</b>	<b>2.4</b>
Bromodichloromethane.....	2.0	N.D.
Bromoform.....	2.0	N.D.
Bromomethane.....	2.0	N.D.
2-Butanone.....	10	N.D.
Carbon disulfide.....	2.0	N.D.
Carbon tetrachloride.....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.
Chloroethane.....	2.0	N.D.
2-Chloroethyl vinyl ether.....	10	N.D.
Chloroform.....	2.0	N.D.
Chloromethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.
1,2-Dichloroethane.....	2.0	N.D.
1,1-Dichloroethene.....	2.0	N.D.
cis-1,2-Dichloroethene.....	2.0	N.D.
trans-1,2-Dichloroethene.....	2.0	N.D.
1,2-Dichloropropane.....	2.0	N.D.
cis-1,3-Dichloropropene.....	2.0	N.D.
trans-1,3-Dichloropropene.....	2.0	N.D.
<b>Ethylbenzene.....</b>	<b>2.0</b>	<b>4.4</b>
2-Hexanone.....	10	N.D.
Methylene chloride.....	5.0	N.D.
4-Methyl-2-pentanone.....	10	N.D.
Styrene.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	2.0	N.D.
Tetrachloroethene.....	2.0	N.D.
<b>Toluene.....</b>	<b>2.0</b>	<b>11</b>
1,1,1-Trichloroethane.....	2.0	N.D.
1,1,2-Trichloroethane.....	2.0	N.D.
Trichloroethene.....	2.0	N.D.
Trichlorofluoromethane.....	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.





Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Air, A-INF Analysis Method: EPA 8240 Lab Number: 509-1703	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Analyzed: Sep 26, 1995 Reported: Sep 27, 1995
---	---	---

QC Batch Number: MS0927958240S2A  
Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS (EPA 8240)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Vinyl acetate.....	2.0	N.D.
Vinyl chloride.....	2.0	N.D.
<b>Total Xylenes .....</b>	<b>2.0</b>	<b>29</b>

Surrogates	Control Limit %	% Recovery
1,2-Dichloroethane-d4.....	50	150..... 84
Toluene-d8.....	50	150..... 105
4-Bromofluorobenzene.....	50	150..... 89

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager





Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Water, A-INF Analysis Method: EPA 8240 & "T.I.C." Lab Number: 509-1703	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Analyzed: Sep 26, 1995 Reported: Sep 27, 1995
---	--	---

QC Batch Number: MS0927958240S2A  
Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS**

Analyte	Detection Limit µg/L	Sample Results µg/L
Butane.....	50	50
2-Methyl Butane.....	50	480
2-Methyl Pentane.....	50	440
3-Methyl Pentane.....	50	180
Methyl-cyclopentane.....	50	160
2,4-Dimethylpentane.....	50	84
2-Methyl Hexane.....	50	47
2, 3-Dimethyl Pentane.....	50	59
3- Methyl Hexane.....	50	44
2,2-Dimethyl Hexane.....	50	79
Methylcyclohexane.....	50	23
2,3,4-Trimethyl Pentane.....	50	35
2,3,3-Trimethyl Pentane.....	50	46

No additional peaks > 5 µg/L were identified by the Mass Spectral Library.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager

Please Note:  
All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA NIST library. Positive identification or specification between isomers cannot be made without retention time standards.





Environmental Resolutions, Inc.  
359 Bel Marin Keys Blvd. #20  
Novato, CA 94949  
Attention: Mark Briggs

Client Project ID: Exxon #7-3006 / #201011X  
Sample Descript: Air, A-INT  
Analysis Method: EPA 8240  
Lab Number: 509-1704

Sampled: Sep 25, 1995  
Received: Sep 25, 1995  
Analyzed: Sep 26, 1995  
Reported: Sep 27, 1995

QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone.....	10	N.D.
Benzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.
Bromoform.....	2.0	N.D.
Bromomethane.....	2.0	N.D.
2-Butanone.....	10	N.D.
Carbon disulfide.....	2.0	N.D.
Carbon tetrachloride.....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.
Chloroethane.....	2.0	N.D.
2-Chloroethyl vinyl ether.....	10	N.D.
Chloroform.....	2.0	N.D.
Chloromethane.....	2.0	N.D.
Dibromochloromethane.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.
1,2-Dichloroethane.....	2.0	N.D.
1,1-Dichloroethene.....	2.0	N.D.
cis-1,2-Dichloroethene.....	2.0	N.D.
trans-1,2-Dichloroethene.....	2.0	N.D.
1,2-Dichloropropane.....	2.0	N.D.
cis-1,3-Dichloropropene.....	2.0	N.D.
trans-1,3-Dichloropropene.....	2.0	N.D.
Ethylbenzene.....	2.0	N.D.
2-Hexanone.....	10	N.D.
Methylene chloride.....	5.0	N.D.
4-Methyl-2-pentanone.....	10	N.D.
Styrene.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	2.0	N.D.
Tetrachloroethene.....	2.0	N.D.
Toluene.....	2.0	N.D.
1,1,1-Trichloroethane.....	2.0	N.D.
1,1,2-Trichloroethane.....	2.0	N.D.
Trichloroethene.....	2.0	N.D.
Trichlorofluoromethane.....	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.







Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Air, A-INT Analysis Method: EPA 8240 Lab Number: 509-1704	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Analyzed: Sep 26, 1995 Reported: Sep 27, 1995
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QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS (EPA 8240)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Vinyl acetate.....	2.0	N.D.
Vinyl chloride.....	2.0	N.D.
Total Xylenes.....	2.0	N.D.

Surrogates	Control Limit %	% Recovery	
1,2-Dichloroethane-d4.....	50	150.....	85
Toluene-d8.....	50	150.....	107
4-Bromofluorobenzene.....	50	150.....	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager





Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Air, A-INT Analysis Method: EPA 8240 & "T.I.C." Lab Number: 509-1704	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Analyzed: Sep 26, 1995 Reported: Sep 27, 1995
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QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS**

Analyte	Detection Limit µg/L	Sample Results µg/L
Butane.....	50	52
2-Methyl Butane.....	50	560
2-Pentene.....	50	53
2, 3-Dimethyl Pentane.....	50	160
2- Methyl Pentane.....	50	320

No additional peaks > 5 µg/L were identified by the Mass Spectral Library.

SEQUOIA ANALYTICAL, #1271

Kevin Van Slambrook  
Project Manager

Please Note:  
All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA NIST library. Positive identification or specification between isomers cannot be made without retention time standards.





Environmental Resolutions, Inc.  
359 Bel Marin Keys Blvd. #20  
Novato, CA 94949  
Attention: Mark Briggs

Client Project ID: Exxon #7-3006 / #201011X  
Sample Descript: Air, A-EFF  
Analysis Method: EPA 8240  
Lab Number: 509-1705

Sampled: Sep 25, 1995  
Received: Sep 25, 1995  
Analyzed: Sep 27, 1995  
Reported: Sep 27, 1995

QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone.....	1.0	N.D.
Benzene.....	0.20	N.D.
Bromodichloromethane.....	0.20	N.D.
Bromoform.....	0.20	N.D.
Bromomethane.....	0.20	N.D.
2-Butanone.....	1.0	N.D.
Carbon disulfide.....	0.20	N.D.
Carbon tetrachloride.....	0.20	N.D.
Chlorobenzene.....	0.20	N.D.
Chloroethane.....	0.20	N.D.
2-Chloroethyl vinyl ether.....	1.0	N.D.
Chloroform.....	0.20	N.D.
Chloromethane.....	0.20	N.D.
Dibromochloromethane.....	0.20	N.D.
1,1-Dichloroethane.....	0.20	N.D.
1,2-Dichloroethane.....	0.20	N.D.
1,1-Dichloroethene.....	0.20	N.D.
cis-1,2-Dichloroethene.....	0.20	N.D.
trans-1,2-Dichloroethene.....	0.20	N.D.
1,2-Dichloropropane.....	0.20	N.D.
cis-1,3-Dichloropropene.....	0.20	N.D.
trans-1,3-Dichloropropene.....	0.20	N.D.
Ethylbenzene.....	0.20	N.D.
2-Hexanone.....	1.0	N.D.
Methylene chloride.....	0.50	N.D.
4-Methyl-2-pentanone.....	1.0	N.D.
Styrene.....	0.20	N.D.
1,1,2,2-Tetrachloroethane.....	0.20	N.D.
Tetrachloroethene.....	0.20	N.D.
Toluene.....	0.20	N.D.
1,1,1-Trichloroethane.....	0.20	N.D.
1,1,2-Trichloroethane.....	0.20	N.D.
Trichloroethene.....	0.20	N.D.
Trichlorofluoromethane.....	0.20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.





Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Air, A-EFF Analysis Method: EPA 8240 Lab Number: 509-1705	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Analyzed: Sep 27, 1995 Reported: Sep 27, 1995
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QC Batch Number: MS0927958240S2A

Instrument ID: GC/MS-2

**VOLATILE ORGANICS by GC/MS (EPA 8240)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Vinyl acetate.....	0.20	N.D.
Vinyl chloride.....	0.20	N.D.
Total Xylenes .....	0.20	N.D.
<b>Surrogates</b>	<b>Control Limit %</b>	<b>% Recovery</b>
1,2-Dichloroethane-d4.....	50	150..... 85
Toluene-d8.....	50	150..... 106
4-Bromofluorobenzene.....	50	150..... 93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

*Kevin Van Slambrook*  
Kevin Van Slambrook  
Project Manager





**Sequoia  
Analytical**

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FAX (916) 921-0100

Environmental Resolutions, Inc. 359 Bel Marin Keys Blvd. #20 Novato, CA 94949 Attention: Mark Briggs	Client Project ID: Exxon #7-3006 / #201011X Sample Descript: Air, A-INF First Sample #: 509-1703	Sampled: Sep 25, 1995 Received: Sep 25, 1995 Reported: Sep 27, 1995
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QC Batch Number: GC092695341608A

Instrument ID: GCHP-8

**CALDERON INERT GASES**

Sample Number	Sample Description	Inert Gases, %			
		O2	N2	CO2	CH4
509-1703	A-INF	15	64	0.65	0.067
509-1704	A-INT	15	63	0.59	0.093
509-1705	A-EFF	16	64	0.56	0.086

<b>Detection Limits:</b>	<b>0.10</b>	<b>3.0</b>	<b>0.15</b>	<b>0.020</b>
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SEQUOIA ANALYTICAL, #1271

Kevin Van Slambrook  
Project Manager

5091703.EEE <9>





# Sequoia Analytical

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Environmental Resolutions, Inc.  
359 Bel Marin Keys Blvd. #20  
Novato, CA 94949  
Attention: Mark Briggs

Client Project ID: Exxon #7-3006 / #201011X  
Matrix: Liquid

QC Sample Group: 5091703-05

Reported: Oct 4, 1995

## QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
QC Batch#:	MS092795 8240S2A	MS092795 8240S2A	MS092795 8240S2A	MS092795 8240S2A	MS092795 8240S2A
Analy. Method:	EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 8240
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD #:	BLK092795	BLK092795	BLK092795	BLK092795	BLK092795
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/27/95	9/27/95	9/27/95	9/27/95	9/27/95
Analyzed Date:	9/27/95	9/27/95	9/27/95	9/27/95	9/27/95
Instrument I.D.#:	GC/MS-2	GC/MS-2	GC/MS-2	GC/MS-2	GC/MS-2
Conc. Spiked:	5 µg/L	5 µg/L	5 µg/L	5 µg/L	5 µg/L
Result:	5	5	6	5	5
MS % Recovery:	98	98	114	102	106
Dup. Result:	4	4	5	5	5
MSD % Recov.:	86	86	100	90	94
RPD:	13	13	13	13	12
RPD Limit:	0-14	0-14	0-11	0-13	0-13

LCS #:	LCS092795	LCS092795	LCS092795	LCS092795	LCS092795
Prepared Date:	9/27/95	9/27/95	9/27/95	9/27/95	9/27/95
Analyzed Date:	9/27/95	9/27/95	9/27/95	9/27/95	9/27/95
Instrument I.D.#:	GC/MS-2	GC/MS-2	GC/MS-2	GC/MS-2	GC/MS-2
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
LCS Result:	61	52	59	54	56
LCS % Recov.:	122	103	117	109	111

MS/MSD LCS Control Limits	DL-234	71-157	37-151	47-150	37-160
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**Please Note:**  
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

SEQUOIA ANALYTICAL, #1271

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## CHAIN OF CUSTODY

9509413

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Consultant's Name: <u>ENVIRONMENTAL RESOLUTION</u>		Site Location: <u>770 High St</u>
Address: <u>359 BEL MARIN KEYS BLVD SUITE 20 NOVATO 94949</u>		Consultant Work Release #: <u>A432503</u>
Project #: <u>20101X</u>	Consultant Project #: <u>20101X</u>	Laboratory Work Release #:
Project Contact: <u>MARK BRIGGS</u>	Phone #: <u>415 390 9105</u>	EXXON RAS #: <u>73006</u>
EXXON Contact: <u>MARLA GLENDEN</u>	Phone #: <u>510 246 8776</u>	Sampler's Signature: <u>PAKLAND CA</u>
Sampled by (print): <u>PETER PERRE</u>	Air Bill #:	
Shipment Method:		

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day)

### ANALYSIS REQUIRED

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas	TPH/Diesel	TRPH	Inert gas	8240 open analysis	Temperature: _____
							BTEX/8015/8020	EPA 8015	S.M. 5520			Inbound Seal: Yes No
A-1NF	9/25	15:25	soil	None	1	5091703				X	X	*Need
A-1WT						5091704				X	X	Verbal
A-EFF						5091705				X	X	Results by
												Wanda Morrison
												9/27

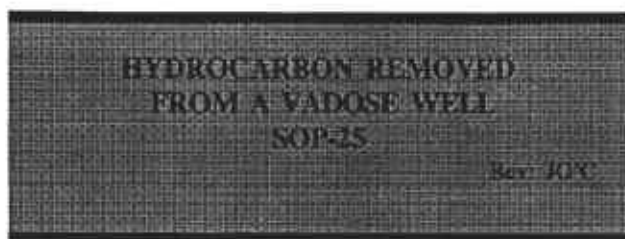
RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>	9/25	17:03	<u>[Signature]</u> SAL-W.C.	9/25/03	17:03	

Pink - Client  
Yellow - Sequoia  
White - Sequoia

**ATTACHMENT C**

**ERI SOP-25 "HYDROCARBONS REMOVED  
FROM A VADOSE WELL"**





## POUNDS OF HYDROCARBON IN AN AIR STREAM

### INPUT DATA:

- 1) Air flow rate acfm (usually by Pitot tube)
- 2) Air pressure at the flow measuring device (in inches of H<sub>2</sub>O) (use {-} for vacuum)
- 3) Air temperature at the flow measuring device.
- 4) Hydrocarbon content of air (usually in mg/M<sup>3</sup>) for ppmv you need molecular weight.
- 5) Length of time (usually hours) over which flow rate occurred)

From periodic measurements, a calculation of total pounds of hydrocarbons removed from a well or from a system are calculated. The input data listed above are measured at a point in time. To calculate quantities removed, some assumptions must be made about what was happening between measurements. The following assumptions will be used for the sake of consistency:

### ASSUMPTIONS:

- 1) Air flow for the period equals the average of the initial and final reading for the period.
- 2) Pressure and temperature for the entire period will be the final reading.
- 3) Hydrocarbon concentration for the period equals the average of the initial and final reading.
- 4) The hours of operation can be taken from an hour meter, an electric meter or will be assumed to be equal to the time between measurements.
- 5) If the unit is found down - try to determine how many hours it did operate and use the data taken for the previous period to make the calculations. Restart the unit and then take data to start the next period.

### SAMPLE DATA AND CALCULATIONS

Date	Time	Temp deg F	Press in H <sub>2</sub> O	HC conc mg/M <sup>3</sup>	Air flow acfm	Calc. lb. rem.
1/6/95	11:00	70	-46	2000	120	
1/7/95	13:00	55	-50	1350	90	
1/8/95	10:00	80	-13	750	100	7.4

Calculate the pounds of hydrocarbon removed from the system during the basis period from 13:00 (1:00 pm) on the 7th to 10 am on the 8th. Pressure and temperature of the measurements (at the flow meter) must be corrected to the P and T used to report the HC concentration (which are P = 1 atm and T = 70 deg F). 1 atm = 14.7psia, 760 mm Hg, or 407 in H<sub>2</sub>O.  $T_{abs} = 460 + T \text{ deg F}$

Hours of operation = 21, T = 80, P = -13, HC = (1350+750)/2 = 1050 mg/M<sup>3</sup>. Flow = 95

$$21 \times 60 \times 95 \times \frac{(460+70)}{(460+80)} \times \frac{(407-13)}{407} \times \frac{28.3}{1000} \times \frac{1050}{1000} \times \frac{1}{454} = 7.4 \text{ lb}$$

$$\frac{\text{hr}}{\text{basis}} \times \frac{\text{min}}{\text{hr}} \times \frac{\text{cu ft}}{\text{min}} \times T_{\text{Corr}} \times P_{\text{Corr}} \times \frac{\text{M}^3}{\text{cu ft}} \times \frac{\text{g}}{\text{M}^3} \times \frac{\text{lb}}{\text{g}} = \frac{\text{lb}}{\text{basis}}$$

$$21 \times 60 \times 95 \times 0.98 \times 0.97 \times 0.0283 \times 1.050 \times 1/454 = 7.4 \text{ lb.}$$

cumulative lbs. (the running total) = the sum of all the previous periods.

Note: If results are given in ppm, an assumption about the molecular weight of the hydrocarbon must be made to get mg/M<sup>3</sup>. ppmv x molecular wt. /22.4 = mg/M<sup>3</sup>. (Use 102 for gasoline)